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VOL. I.—3RD YEAR—No. 6. SYDNEY: SATURDAY, FEBRUARY 5, 1916. PRICE 6D.

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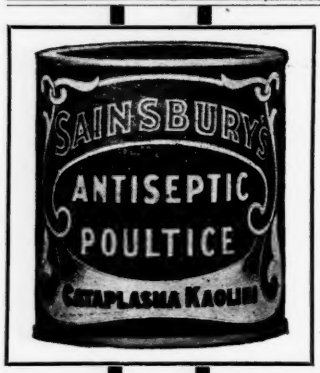

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THE MEDICAL JOURNAL OF AUSTRALIA.

VOL. I.—3RD YEAR. SYDNEY: FEBRUARY 5, 1916. No. 6.

EXPERIENCES WITH THE A.A.M.C. AT GALLIPOLI.[1]

By **John Corbin, M.R.C.S. (Eng.), L.R.C.P. (Lond.),**
Major, 1st Australian Clearing Hospital.

In making a few remarks on my experiences since leaving Australia as a member of the Expeditionary Force, I must ask for your tolerance if there is an excess of the first personal pronoun.

In proceedings that became so great and diversified after the landing in Gallipoli, and, indeed, before, while the force was concentrating in the Island of Lemnos, it became impossible to do more than grasp fully my own part in the scheme of things, and those events that came under my personal observation naturally bulk largest in my memory.

I do not intend to enter into any controversial matters, nor to attempt to explain the why and wherefore of certain events that are now more or less matters of common knowledge.

It is sufficient to describe the trip on the *Kyarra*, which carried five hospital units from Australia, as one of great discomfort, lasting six weeks before we arrived at Alexandria.

On arrival there, on the 14th January, 1915, the officers commanding units were instructed to proceed to Cairo, and there was a general air of doubt as to whether all, a part or none of our units should disembark in Egypt or proceed to France.

The men who went to Cairo returned to the ship, having gathered the impression that our large hospital accommodation was quite unnecessary at that time, and the authorities seemed to be in doubt as to what to do with us.

The nursing sisters seemed to present special difficulties, and to be quite unnecessary then.

Of course, later on, when considerable sickness had developed amongst the Australian troops, all the hospital accommodation was needed, and there was plenty of work for all, even before the casualties returned from the Gallipoli Peninsula.

With regard to the sickness prevalent, a great deal of it was due, in my opinion, to the fact that measles occurred on nearly every transport carrying troops from Australia to Egypt, and in practically every camp, coupled with the fact that influenza was also prevalent in the same manner.

All the troops were encamped on the desert, in one of several places. The tent accommodation, in some instances, was overcrowded, and numbers of men preferred to sleep outside rather than in a crowded tent. The change of temperature in Egypt is exceedingly abrupt from night to day. A hot sun and high temperature from 9 a.m. until about 5 p.m., and then, with the sinking of the sun, an immediate drop of temperature are exceedingly dangerous. By nightfall we were glad to get into several blankets, and, indeed, even then it was cold work sleeping in tents.

The dust by day helped to irritate mucous membranes of throat and air passages. The men had heavy "fatigues" and marching, often returning just at sunset, and were not always careful in discarding warm clothing.

One has heard and read a great deal of the riotous behaviour of the Australian troops in Egypt, and much that has been written is ridiculous, and most of it would have been better suppressed. I have spoken to many Imperial soldiers of long experience, and the general opinion is that the troops behaved better on the whole than an equal number of Imperial troops would have in like circumstances, and, except for isolated instances, certainly no worse.

The No. 1 Australian Stationary Hospital disembarked on the 23rd of January, and entrained for Cairo. On arrival we were sent to Maadi, an English suburb of Cairo, near which the Light Horse camp was situated. We there formed a hospital for the troops, partly in a house which was turned into a hospital and partly in tents pitched on the desert. Half this hospital was detached on the 27th of January, under Major Powell, for duty at Ismalia. Colonel Bryant detailed Major Newland and Captain Verco to accompany the half unit, and there was much sadness in the hearts of Wilson, Le Messurier and myself, who were left behind to attend to the measles, coughs, colds and venereal cases at Maadi. However, we learnt a considerable amount of military procedure, and of the difficulties met with in the conduct of a military hospital. As I had the rank of captain and honorary major, my duties were of a humble character, rather corresponding to a house surgeon at a general hospital. Our greatest difficulty at this time was in the matter of drugs. Orders were issued that our supplies from Australia were not to be opened, as we might be moved on suddenly, and there was the greatest difficulty in getting any drugs at first. Later we obtained permission to buy them, and this was rectified to a certain extent, but there was at first great difficulty in every medical unit, including regimental medical officers and all hospitals, in obtaining supplies. Our life settled down into a dull routine, with the exception of my own, for, on the 10th of February I developed a pleurisy and broncho-pneumonia, finally being sent to the No. 1 General Hospital at Heliopolis, where I remained until the 28th, when I rejoined my unit.

The following day we received orders to pack and prepare to leave Egypt the next day. We entrained on the evening of the 2nd, and embarked on a transport at Alexandria the following morning and left for an unknown destination at midday.

We arrived at the harbour of Mudros on the 6th of March, a huge, land-locked harbour, surrounded

[1] Read at a Meeting of the South Australian Branch of the British Medical Association on November 25, 1915.

by bare, undulating country, with occasional high, stony hills. The town of Mudros is just a scattered collection of white cottages. We stayed in this harbour for seven weeks, the Stationary Hospital disembarking on the 14th and setting up a small hospital, to take the sick of the transports, which were continually arriving. The scene ashore was like a piece from a comic opera. The small quay was crammed with soldiers of every description: British territorials, Navy men, French territorials, with officers in the most splendid uniform, ditto their naval men. Heaps of Zouaves, in their fanciful uniform, Senegalese, big black men of fine physique, in elaborate uniform, chattering Greek peasants in a variety of national garbs and, through them all, the husky Australian, swearing, grumbling and rough to look at, but doing more work than any equal number of other troops.

There was nothing of great interest from a professional point of view, except the extreme virulence of the pneumonia in some instances. It was exactly of the type of pneumonia that developes in Adelaide during certain influenza epidemics. There were slight physical signs, not much dulness, few crepitations and patchy bronchial breathing, accompanied by considerable expectoration of almost pure blood and blood-stained mucus. The patients were always much more ill than the signs would indicate, and several died.

I exchanged into the Clearing Hospital, with Captain Mattei, of that unit, on the 26th of March. By doing this I obtained a senior position in the new unit, and some opportunity of obtaining surgical work, a possibility exceedingly remote in the Stationary Hospital.

Until the 18th of April we were on the transport *Ionian*, occupied with routine duties, one of which being the cleansing of an exceedingly dirty transport. Besides this, we were constantly practising landing in small boats, getting wounded off the beach into small boats and various evolutions to fit the men for duties ahead.

On the 18th, five officers of the Clearing Casualty Station, as the Clearing Hospital was called, embarked on the *Novian*, with 60 men and a small portion of our equipment. We were informed that this was the ship we were to go to the Peninsula in. On board we found the 5th Battalion of infantry, under Colonel Wanliss, 500 horses, details of Engineers and Field Telegraph, Wireless, etc. Later, Brigadier-General McKay and his staff joined us. It was frightfully crowded, and as there was only accommodation in cabins for about nine officers, and there were between 50 and 60 on board, we had to sleep where we could, which meant, for the majority, on the floor of the tiny saloon or the iron deck. As we were limited to 35 lbs. for officers, we had no spare mattresses and very little covering. Owing to weather, I believe, our starting was postponed until the 24th of April, when we left Mudros at 11 a.m., steaming out through the lines of transports and battleships, with a piper's band playing, and proceeded due west, and then north to a *rendezvous* on the other side of Lemnos. We breakfasted at 2 a.m., and found ourselves under weigh in the most absolute silence, no lights anywhere, except the small red lamp astern of the next transport in front of us. There was a ghostly shape on either flank of a torpedo destroyer.

Everyone was on deck, and as the grey of the coming dawn became less dense, we turned in towards the Gallipoli Peninsula and slowly crept in towards the land. As the light became a little more marked we could see a transport on either side of us stealing in slowly, level with us, and gradually the line of coast became apparent as a dim outline. Later on we could just make out dark objects between us and the shore, which were torpedo boat destroyers, crammed with men of the 3rd Brigade. A single shot was heard at 4.30 by my watch. There was silence for a short space, and then the rattle of musketry. Very soon afterwards guns began firing from the right of the position and the warships began to reply. As the sun rose just before 5 a.m., everything became clearer, and we could see where our shells were bursting in the vicinity of the Turkish guns, whose flash could be seen clearly each time they fired, and then, later, would come the smoke over the beach, which denoted the bursting of shrapnel.

One Turkish gun, or series of guns from Gaba Tepe seemed to be the most troublesome, and the *Bacchante* steamed right in, and went within half a mile of the shore, and each time this gun opened fire the *Bacchante* roared out a broadside. They controlled its fire and made it eratic, but could not put it out of action.

At 5.30 a.m. we could see the cliffs and recognize their steepness and the difficulties. Our men could be seen climbing up wherever there was foothold and disappearing over the first ridge. At this time a pinnace came alongside with a man shot through the chest, who died in five minutes after getting him on board, and another A.B. who was shot through the arm. These two made one realize that it was not a pageant for our amusement, but a serious and horrid affair, and that the pretty puffs of smoke, like cotton wool, contained shrapnel bullets, which killed and maimed men. A little later another boat brought a dead private of the 12th Battalion and seven wounded. These had never landed at all.

Just about 7 o'clock the big guns at Chanak opened fire on the transports, and one shot fell within 30 yards of our stern. Orders were given to get out further, and this delayed our landing. We did not get a tow ashore until just after 10 a.m., and this journey, in crowded boat, towards the beach was one of the most uncomfortable I have ever undertaken. The period of inaction, sitting quite still and trying to calculate whether you would get ashore during, before, or after a round of shrapnel from the Turkish gun was one of abject misery to me at any rate.

It was a relief to get ashore, amongst a crowd of shouting, shoving, heaving men, all giving orders it seemed at first, all trying to get ammunition, food, troops, mules, anything and everything on to the beach.

There were wounded everywhere. We were shown a spot for our dressing station, about 20 feet wide and from the cliff down to within six or ten feet of the water's edge.

The whole beach, we found later, was 600 yards long, and nowhere was it more than 18 to 20 yards wide.

I have never seen anything that looked so like absolute hopeless disorder, and nothing in my life has given me such an impression of human energy as that beach. It was not in disorder really; everyone was doing his job. But it was so cramped and so much was being done on it that it was bump, hustle and strive to get your own job done and room for your mules, food, ammunition or sick as the case might be. Concentration on your own job and total disregard of the other fellow was the only way the whole thing got pieced together and was carried through.

Fortunately, we had work to do from the moment of landing, and no room for fear. Nothing removes this hideous feeling of emptiness in the pit of the stomach and strangles out fright like having something you must do and which you can't do without using your mind and concentrating your attention.

During the first four days we were working almost continuously. There were five officers—Colonel Giblin, Major Richards, Captain O'Brien, Captain Atkins and myself—and sixty men. Of course, after the first 24 hours we tried to get regular relief of one or another, and snatched short periods of sleep, but this merely meant lying down on the beach in our clothes, and covered with a single blanket, we slept, thoroughly exhausted, until roused to work again.

Food of course, was scanty. We had tea constantly and had biscuits, but practically nothing else for the first few days. During those first four days 3,300 wounded passed through our hands. We gave up recording them, as our only book was filled up on the first day, and simply counted them. During this time all urgent operations were done, including necessary amputations, tying of arteries, several belly cases, depressed, compound fractures of skull, bladder cases and big, compound fractures of the thigh. All these necessitated anæsthetics, which were administered in nearly every instance by non-commissioned officers or by privates.

We could not get any wounded off the beach until night, as all boats and tows were needed to bring in supplies and troops. We began to evacuate them at 5 p.m., and got about 600 off by 8 p.m. They lay, during the day, all along the beach, for several hundred yards, in what shelter we could devise, much of its inadequate, of course. They were all given surgical care and some food, tea, bovril, biscuits, etc. Many were hit by shrapnel while lying there, and had to be re-dressed.

Of course, later on we had help. After Thursday the Marine Light Infantry Ambulance came ashore, and were very helpful, and when they left the 4th Field Ambulance came into their position, and helped with the treatment and evacuation of the wounded.

After the first rush, things quietened down. Except when some advance took place there was not a tremendous number of wounded daily, and we were enabled to make better provision for their surgical needs.

There was plenty to do every day, as we had to act as medical officers of practically all the beach parties, as well as dressing station and evacuating station. As days went on there was a very large number of sick, and each week the number evacuated grew greater, and the condition of the men evacuated was worse. Their endurance, not only of pain when wounded but of the steady, dull routine, not without danger to life in the trenches and their resolution not to report sick was most striking.

During the advance immediately following the landing, the work of the regimental surgeons and stretcher-bearers, and the work of the officers and men of the stretcher-bearer sections of the Field Ambulances was beyond praise. Nothing could exceed their fearless devotion to duty, the way they exposed themselves to risk in order to carry help to the wounded was beyond praise, and the physical labour of carrying men up and down precipitous ravines, covered in prickly bush and dense undergrowth amazed me.

The men of the Casualty Clearing Station behaved in the most exemplary manner. The beach, from the moment of landing up to the time of my leaving, was described by men in the fighting here as the most "unhealthy" spot in the whole position. I can vouch for the unpleasantness of life upon it, and reference to my daily diary shows that in 18 weeks there were only five days in which no shrapnel was fired on it.

Despite this, the men of the unit, I refer to privates and non-commissioned officers, worked cheerily, efficiently and well. When it is remembered that they were drawn from all sorts of ordinary avocations—blacksmiths, builders, architects, clerks, fruit-growers, miners, club stewards, etc.—and that there had been little opportunity of training them, or rather very little time, in their special duties, it is amazing that they adapted themselves to the emergencies of the situation so ably.

They dressed hideous wounds efficiently, helped us intelligently to adjust splints to hateful compound fractures, gave chloroform hundreds of times and assisted at operations. All this was done in a quiet, matter-of-fact way, no fainting, no vomiting, just a steady attention to duty and listening to commands and profitting by instruction. Just one more instance of Australian adaptability.

Their courage, too, was fine, for, remember, they were under fire more or less all the time. The stretcher-bearers of our unit went up the hillside all along the beach and on the piers and never failed in this necessary and very dangerous duty.

After the Turks had succeeded in getting a .75 gun in position on our left, from which they could enfilade the beach, our hospital position became one of very considerable danger. Several of our men were put out of action by shrapnel bullets, the shelter-shed for wounded was pierced by a huge explosive shell, which killed a sick man lying on a stretcher, wounded another and so shattered the leg

of a member of our unit that it had to be amputated two days later on a hospital ship, and he died.

After many days of talk about it and considerable argument, we were moved into a position nearer the centre of the beach on July 2nd. The Engineers dug out the cliff and made a more commodious place and one infinitely safer.

It was in this position that we were when the fighting on the 5th and the 6th of August took place, and later the fighting from the 7th to the 12th August, following upon the Suvla landing.

We really had the direction of the evacuation of the wounded, not only from the 1st Division, but also a large part of the Australian and New Zealand Division, and later on, when it was found almost impossible to cope with the wounded from the new British Division on the left, a large proportion of their stretcher cases, and nearly all their walking cases came through us. In just over 50 hours roughly 5,000 were handled by our station. Of course, at this time, all the tent subdivisions of the Field Ambulance were ashore, and they did a large part of the dressing, splinting and necessary operating, so that, except where splints had slipped, dressings become soaked or disarranged, or operative cases been forwarded direct to us instead of through a field ambulance, we had nothing like the same amount of surgical work in proportion to the number of cases to do. In addition to this, there was infinitely better and more ample hospital ship accommodation, and so many cases that we would have done under other circumstances were rushed on to the hospital ship for operation.

Still, the work entailed in providing for the dressing when necessary, their feeding and safe and comfortable housing while in our hands, and the most important work of getting them safely and easily transported from the shore to the ship was very heavy.

I really think that, owing to the organization and the efficient and skilful work done by the non-commissioned officers and men of the 1st Australian Casualty Clearing Station, these huge numbers of casualties were handled in such an orderly and quick manner that the authorities themselves do not realize how excellent was the work done by this unit. There was never disorder or chaos, and the men's comfort and welfare was attended to continuously and well, and the greatest expedition was obtained in getting the wounded on to hospital ships. Under present conditions these constitute the three greatest duties of a casualty clearing station.

I could talk for hours of the dash, heroism and amusing characteristics of the Australian troops, both in action, in trenches and when wounded, but I have already doubtless tried the patience of some. There are many points concerning military matters and administration which I should have liked to touch on, but you can understand that this is quite impossible. I could tell you many amusing stories of the soldiers and details of Cavanagh Mainwaring, thin as a herring, grey as a badger, loving his work, doing it fearlessly and conscientiously, and loved by his men; of young Fry, doing splendid work with the 3rd Field Ambulance; of Goldsmith, with a permanent cigarette in his funny little holder, quite unchanged by war's alarms; of young Nott, with a fierce, black beard and looking after his wounded in a fearless way. Jermyn and Meikle we saw often on the beach. Young Gordon was greatly admired by the men of the 4th Field Ambulance, and his death greatly felt.

I could go on to scores of men you know, and might be interested to hear of, but I could not say ill of one man whom I met on the beach at Anzac, fighting men, stretcher-bearers, army service corps, padre men, all have done their bit and done it well, and I am truly proud to have been associated with them.

COMPLEMENT RE-INFORCEMENT OF ANTI-MENINGOCOCCAL SERUM IN THE TREATMENT OF CEREBRO-SPINAL MENINGITIS.

By **R. J. Bull, M.D., B.S.,**
Director, Bacteriological Laboratory, Melbourne University; Lecturer in Bacteriology, etc.,
and
N. Hamilton Fairley, M.B., B.Ch.,
Resident Medical Officer, Melbourne Hospital.

This paper is the outcome of a suggestion made by one of us at a discussion on cerebro-spinal fever at the Melbourne Branch of the British Medical Association in October, that better results in the serum treatment of this disease might be expected by complement re-inforcement of the specific anti-serum.

Cerebro-spinal fluid is notoriously deficient in antibodies, even when the blood is comparatively rich in these substances. The object of intra-thecal injection of specific serum is not only to make good this deficiency but to overwhelm the meningococcus with an excess of bacterio-tropic substances such as the more potent of the specific antisera are known to contain. McKenzie and Martin[1] observed that fresh human serum contained thermo-labile substances which had an inhibitory effect on the growth of meningococcus. Serum from cases of cerebro-spinal meningitis, particularly that from convalescents, contained much more of these substances. Accordingly fresh human serum was employed by them intra-thecally in the treatment of this disease, with encouraging results. For example, while the mortality in a series of 50 cases treated without serum was 92%, 10 out of 16 acute cases treated with human serum intra-thecally recovered (giving a mortality of 38%). Four chronic cases were treated by this method, but all the patients died.

The bactericidal effects observed in their experiments were shown to depend on complement. In our own experience the quantity of antibodies (particularly agglutinins and substances capable of fixing complement) present in the serum of patients suffering from cerebro-spinal meningitis, and of convalescents from this disease, is small compared with the more potent antisera produced by artificial immunization of horses. Since the method of McKenzie and Martin depends on the presence of specific antibodies plus non-specific complement,

both present in human serum, much better results might be expected to follow the use of potent commercial sera. Unfortunately cerebro-spinal fluid is deficient in complement. In our own experiments, in an extended series, no trace of complement was found in 1.5 c.cm. of cerebro-spinal fluid, except in one case in which a slight trace was present probably due to admixed blood. The complete absence of complement in cerebro-spinal fluid is remarkable, particularly as the majority of the specimens were turbid, and contained large numbers of polymorphonuclear leucocytes. It is difficult to understand the mechanism of the inflammatory reaction which allows of immigration of leucocytes and out-pouring of fluid from the vessels into the central nervous system, and which at the same time, takes exception to the passage of complement. If complement is in any way related to the *cytases* of Metchnikoff, its liberation by destruction or damage of leucocytes is an argument against the leucocytic origin of complement.

As commercial antisera are devoid of complement, and as much of their useful bacterio-tropic action, when introduced intra-thecally is rendered inoperative or ineffective as the cerebro-spinal fluid is also innocent of complement, we have undertaken certain laboratory experiments, and obtained certain clinical data which we put forward briefly in this paper as a plea for the more rational use of anti-meningococcal sera by complement re-inforcement with fresh serum prepared from convalescents, but failing these from normal healthy individuals, or from horses. Our experiments so far do not lead us to place much reliance upon fresh normal horse serum.

In estimating the complement-content of various sera, we took as the unit of complement the volume of serum (made up to 1.5 c.cm. of saline solution), which, when added to the hæmolytic system (1 c.cm. of a 2.5% suspension of sensitized sheep red cells in saline solution) produced complete hæmolysis in 30 minutes at 37° C. Guinea-pig serum was found to be by far the most active of those tested, and horse-serum the feeblest, the unit of complement being contained in 0.015 c.cm. of guinea-pig serum, and in about 1 c.cm. of horse-serum. Guinea-pig serum was therefore over 60 times as rich in complement as normal horse-serum. The complement-unit volumes and ratios are shown in the following table:—

Serum.	Volume Containing One Unit of Complement. Average.	Complement Content Ratios.
Acute Cases of Cerebro-Spinal Meningitis	0.1 c.cm.	10.
Chronic Cases of Cerebro-Spinal Meningitis	0.15 c.cm.	6.6
Convalescent Cases	0.16 c.cm.	6.2
Vaccinated with Meningococcal Vaccines	0.5 c.cm.	2.
Normal Human Serum	0.18 c.cm.	5.6
Convalescent Pneumonia	0.07 c.cm.	14.
Acute Pneumonia	0.1 c.cm.	10.
Guinea-pig	0.015 c.cm.	66.
Horse (normal serum)	1.0 c.cm	1.

It is impossible to do more than to refer briefly to some of the principal experiments in this article. Much has of necessity been omitted, but we have included sufficient of the essential data to indicate which variety of human serum is likely to be most useful and most practicable from the point of complement re-inforcement. For example, we do not propose to recommend the use of serum from an acute case, although the blood in our experience is richer in complement than chronic or convalescent cases. In any case, human serum is more uniform in complement-content than in specific bacteriotropic substances, and the fact that we have found the more potent of the artificial anti-meningococcal sera from 60 to 1000 times as rich in specific complement-fixing substances should be a further recommendation or justification for a thorough trial of the complement re-inforcement method as applied to commercial sera.

Report on Cases.

The human serum from convalescent cases of cerebro-spinal meningitis has invariably been used for complement re-inforcement. The amount was generally 5 c.cm. human serum and 20 c.cm. anti-meningococcal serum. Since such small quantities of human serum were used, any increased value of re-inforced serum over that of simple anti-meningococcal serum must be attributed rather to the addition of complement than of specific antibody. McKenzie and Martin's[1] average injection was 15.20 c.cm. of human serum in their reported cases; they used it to supply specific antibodies rather than complement.

Technique.

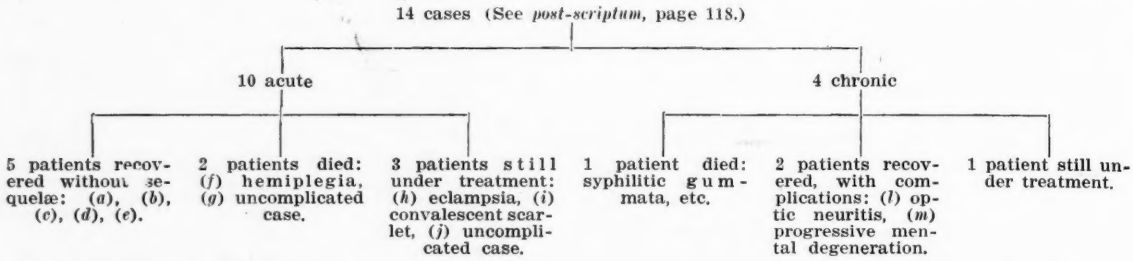
The mode of obtaining human serum is a simple procedure. A rubber tourniquet is applied to the arm tightly enough to produce a venous congestion. Under aseptic conditions the needle of a record syringe is inserted into the median basilic or cephalic veins and when blood flows freely the barrel is attached and blood slowly aspirated. This procedure can be repeated as often as required leaving the needle *in situ*. Thus in 5 minutes 200 c.cm. of blood can be obtained. This is stored in a series of 55 c.cm. test tubes with sterilized cotton wool plugs and kept for 1½ hours at ordinary temperature to allow clotting to proceed; subsequently it is placed in an ice chest for 6-8 hours. The supernatant serum is poured off as required.

Syphilitic Infection.

The danger of conveying syphilitic infection has been considered. A Wassermann test has been made in all cases. The low temperature to which the serum had been subjected would impair the vitality of the *spironema pallida* sufficiently to render infection from this source improbable.

All the cases reported were instances of undoubted cerebro-spinal meningitis. The bacteriological, clinical, and pathological evidence has been most uniform throughout the series. One case, though clinically cerebro-spinal meningitis has been rejected, as the microscopic picture showed mononuclear cells and Gram-positive encapsulated diplococci. In another case a dominant lymphocytosis in the cerebro-spinal fluid was noted in the first two days, but two days later the polynuclears prodominated and typical Gram-negative, intracellular diplococci were present. Horder[2] says this is common. Fourteen

patients have been treated by complement re-inforcement method:—


14 cases (See post-scriptum, page 118.)
10 acute
4 chronic
5 patients recovered without sequelæ: (a), (b), (c), (d), (e).
2 patients died: (f) hemiplegia, (g) uncomplicated case.
3 patients still under treatment: (h) eclampsia, (i) convalescent scarlet, (j) uncomplicated case.
1 patient died: syphilitic gummata, etc.
2 patients recovered, with complications: (l) optic neuritis, (m) progressive mental degeneration.
1 patient still under treatment.

The acute cases have been treated by complement re-inforcement method alone unless otherwise stated. The chronic cases were all treated in addition with potassium iodide and vaccines. A comparison of various modes of therapy are as follows:—

Group 1.—The mortality of the acute cases has equalled 30% under complement re-inforcement therapy.

Group 2.—The mortality of similar cases treated only with anti-meningococcal serum has equalled 50% approximately.

Group 3.—The mortality with lumbar puncture and urotropine has equalled 80% approximately.

Regarding the severity of the infection the earliest cases, *i.e.*, Group 3, were probably the most severe. Cases in Group 1 and Group 2 were of equal severity and should afford a fair index of comparison.

Of the fatal cases in this series there was one acute uncomplicated case of marked severity, one hyper-acute case, with a high blood pressure, terminating in death from a capsular hæmorrhage, and one chronic case complicated by gummatous infiltration of the *tibialis anticus*, *Achilles* and patellæ tendons and a positive Wassermann reaction.

Effects of Intra-Thecal Injections of Re-inforced Serum.

(1) Cerebro-Spinal Fluid.—There was a progressive decrease in the turbidity of the fluid in the majority of cases. In one, however, there was increased turbidity, and here the temperature rose correspondingly. Several similar cases have been noted after intra-thecal injections of ordinary anti-meningococcal serum.

In like manner the quantity of cerebro-spinal fluid and its pressure often tended to decrease under serum therapy. The average pressure on admission was approximately 300. mm. water pressure as measured by the Quincke manometer[3]. In two cases at least there was an extraordinary increase in the intra-thecal pressure from the 7th to the 11th day. In one case it reached 640. mm. water pressure; in the other 940. mm., one of the highest readings yet reported in the literature. Of these last two patients one has recovered, and the other has since died.

(2) Course of the Disease.—The general condition of the patient was almost invariably improved under this treatment, even when the temperature remained of remittent type, while in others termination of lysis was very common, and followed at varying intervals after intra-thecal injections were begun.

The five acute cases in patients who recovered terminated by lysis on the 4th to the 20th day of the disease. No case terminated by crisis. The following table illustrates some points of interest, showing the effect of treatment on one of the recovered cases, *i.e.*, case (a) in the series:—

Case (A) Day.	Amount of Cerebro-Spinal Fluid on Lumbar Puncture.	Intra-Thecal Pressure. Mm. Water.	Blood Pressure. Mm. Hg.	Temperature.	Serum.
1st	70 c.cm. turbid fluid	350	122	101° F.	24 c.cm.
2nd	50 c.cm. opalescent fluid	250	114	100° F.	17 c.cm.
3rd	75 c.cm. clear fluid	280	106	100° F.	None
5th	55 c.cm. clear fluid	180	110	98° F.	None

The patient then made an uninterrupted recovery.

(3) Sequelæ and Complications.—In all the acute cases ending in recovery no sequelæ and complications ensued. Of the two patients recovering from chronic infection one had optic neuritis, which has since cleared up, while the other is now showing evidence of progressive mental degeneration.

The number of injections have varied from 2 to 15 according to the type and course of the case.

A patient was considered convalescent when the cerebro-spinal fluid cleared and the pressure was not above 150 mm. water pressure, when there was normal pulse, temperature, and respiration, and when rigidity of the neck and Kernig's sign had disappeared.

Detailed Report of Cases.

Case (A).—The patient, a female, aged 17 years, complained of headache, shivering and vomiting of 2 days' duration. There was no herpes and no rash. Stiff neck, the neck sign, Brudzinski's and Kernig's signs were all present. The temperature was 101°, the pulse-rate 97 and the respirations 25 in the minute. Lumbar puncture withdrew 70 c.cm. of turbid fluid under pressure of 350 mm. water pressure. The patient recovered after receiving two injections of re-inforced sera (see table).

Case (B).—A female, aged 25 years, gave a six days' history of vomiting, shivering and headache. The temperature was 102.4°, the pulse-rate 96, the respiratory rate 28 and the blood pressure 114 mm.

Hg. Herpes was present, but no other rash. Stiff neck, neck sign, Brudzinski's and Kernig's signs were all present. On lumbar puncture 30 c.cm. of turbid fluid under 225 mm. water pressure were withdrawn. At the beginning of the second week, the intra-spinal pressure rose to 580 mm. water pressure, and subsequently fell rapidly.

Ten injections of mixed sera were given. Termination occurred by lysis; convalescence was established on the 13th day.

Case (C).—A female, aged 41 years, was admitted with vomiting, shivers and frontal headache. The temperature was 100.4°, the pulse-rate was 120, there were 28 respirations in the minute, and the blood pressure was 128 mm. Hg.

The patient was a pale, shocked woman, mentally drowsy, with stiff neck, neck sign, and Brudzinski's and Kernig's signs. Incipient herpes and a diffuse petechial rash were present. On admission 60 grs. of helmitol were given *per os* and a Barker's needle inserted intra-thecally. At hourly intervals for 12 hours the theca was tapped and 30 drops of cerebro-spinal fluid run on to ascitic agar slants. For the first three hours colonies developed, but thereafter none grew; *pari passu* helmitol was demonstrated in the cerebro-spinal fluid over this period. For the next three days 60 gr. were administered, and no growth was again obtained. Despite this inhibition of the activity of the diplococcus, the temperature remained remittent. On the 5th day reinforced serum therapy was instituted. Five injections of re-inforced serum were given, and on the 11th day the temperature was normal. It rose on the 13th, and the patient made an uninterrupted recovery. It is interesting to note that after continuous lumbar puncture on the 1st day the intra-spinal pressure never rose above 150 mm. water pressure, which is the upper normal limit.

Case (D).—A female, aged 41 years, vomited and complained of a cold feeling for two days. On the following day symptoms of mental disturbance appeared. The patient was flushed, with a dry brown tongue, and injected throat. The temperature was 101°, the pulse-rate 96, the respiratory rate 24, and the blood pressure 140. There was marked stiff neck, Kernig's sign, Brudzinski's sign, and the neck signs were all present. Lumbar puncture was carried out and 30 c.cm. of turbid fluid under marked pressure were obtained. Five injections of re-inforced serum were given, and a normal temperature was reached in 12 days. After a week of normal temperature, pulse and respiration, a slight recurrence occurred, which was treated with vaccine as the lumbar puncture fluid was clear and under normal pressure. Throughout the disease the intra-spinal pressure never rose above 170 mm. water pressure.

Case (E).—A female, aged 37 years, complained of sore throat and cold of one week's duration. On the day before admission she suddenly developed shivering feelings, headache and generalized abdominal pain; she vomited and mental symptoms appeared. She presented on examination an injected throat, a furred tongue, a stiff neck, Kernig's sign, etc. Herpes were present on the lips and an erythematous rash around elbows and knees. The temperature was 97°, the respiratory rate 24, the pulse-rate 92, and the blood pressure 126 mm. Lumbar puncture was carried out and 45 c.cm. of turbid fluid under a pressure of 260 mm. were withdrawn. After six injections the cerebro-spinal fluid became clear, and under practically normal pressure. Later the temperature rose, but after further injections it again reached normal.

Case (F).—A female, 53 years of age, was admitted with headache, shivering and vomiting. The temperature was 97°, the pulse-rate 108, and the respirations were 28 in the minute. The patient was wildly delirious, She had an injected throat and a furred tongue. There was relative dulness at the base of the right lung, with bronchial breathing and crepitant râles. There was marked rigidity of the neck, a positive Brudzinski's sign, as well as the "neck sign." The skin showed a diffuse petechial rash. On lumbar puncture 45 c.cm. of yellow, turbid fluid under 450 mm. water pressure were withdrawn. The blood pressure was 160 mm. The patient improved during the first 48 hours under serum treatment, and then suddenly developed a hemiplegia of the right side with paralysis of arm and paresis of leg and face.

Babinski's reflex was present on both sides, and the superficial abdominal reflexes were absent. The modification of Brudzinski's phenomena was interesting; on full flexion of the left leg there was no contra-lateral flexion reflex of the right limb, but flexion of the right leg there was a marked contra-lateral flexion reflex of the left. The patient lived on for another five days, during which time re-inforced serum treatment was persisted in.

Autopsy: Cortico-basal type of meningitis, with a hæmorrhage in the left internal capsule; hypostatic congestion and œdema of the right lung.

Case (G).—A female, aged 22 years, was suffering from vomiting, headache and shivers. The temperature was 101°, the pulse-rate 80, the respiratory rate 24, and the blood pressure 134. The tongue was furred, and the throat injected; there was marked stiffness of the neck. Kernig's sign, the neck sign and Brudzinski's sign were present. There was definite herpes, but no other rash. Fifty cubic centimeters of turbid fluid under a pressure of 350 mm. were obtained by lumbar puncture. Ten injections of reinforced serum were given, but the temperature throughout remained intermittent in type, the intra-thecal pressure rose as high as 640 mm. water pressure, and ultimately the patient died, 18 days after admission, of respiratory failure. No autopsy was made.

Case (H).—A female, aged 19 years, was admitted with puerperal eclampsia. The urine was solid with albumin. Twenty fits occurred on the second day after admission. There was a typical meningeal picture with rash, herpes, stiff neck, etc.

Lumbar puncture was carried out and 45 c.cm. of turbid fluid under a pressure of 200 mm. were withdrawn. The temperature was 101.6°, the pulse-rate 104, and the respiratory rate 24. It was not

possible to measure the blood pressure during the first three days. Re-inforced serum therapy was instituted, and the patient is now doing well. The blood pressure is 130. The cerebro-spinal fluid is much clearer, and the pressure nearly normal. The temperature has fallen to 99°, the pulse-rate is now 96, and the respirations 18 per minute. (See *post-scriptum.*)

It should be noted that on two occasions in this case 10 c.cm. of cerebro-spinal fluid were taken and heated at 60° C. for 30 minutes. This was then injected into the flank. This should act not only as an autogenous vaccine but also in virtue of being rich in leucocytic extracts, the value of which Hiss and Zinser[4] were the first to advocate.

Case (I).—A female, aged 21 years, had been in hospital for 14 days on account of scarlet fever. The temperature was 101°, the pulse-rate 108, and the respiratory rate 24. Four days before she had been seized with shivering, headache and vomiting. The patient was flushed, the tongue was dirty; there was marked stiff neck and Kernig's sign, etc. On lumbar puncture being performed 40 c.cm. of turbid fluid were withdrawn. Under re-inforced serum therapy patient is progressing satisfactorily. (See *post-scriptum.*)

Case (J).—A female, aged 16 years, was attacked with vomiting and severe headaches. She was semi-comatose; her pupils were dilated. The blood pressure was 80 mm., the temperature 101.8°, the pulse-rate 102, and the respirations 36 in the minute. Lumbar puncture was carried out, and 60 c.cm. of turbid fluid under 135 mm. pressure were withdrawn. The temperature was very irregular, and of an intermittent type. Ten injections of mixed serum were given. The fluid cleared, but during the last 5 days the pressure has risen steadily till 940 mm. water pressure has been established. Apart from severe headache and stabismus due to paresis of the left external rectus, the patient seems to be progressing satisfactorily. Thyroid extract, which has been found experimentally to decrease the amount of cerebro-spinal fluid in animals, is being administered *per os.* (See *post-scriptum.*)

The details of the chronic cases will not be considered. Three of the four cases developed "dry tap," so that only small doses of serum could be used. Marked intermittent fever (malarial in type) was present in two of these cases, intermissions of 7° F. daily sometimes appearing. In another case regular remissions occurred over several weeks.

Our thanks are tendered to Dr. Wisewould and Dr. Bennett for the history of the last three cases, *i.e.*, cases (H), (I) and (J) in the series.

Summary.

As cerebro-spinal fluid and anti-meningococcal serum are both devoid of complement, and as the full effects of a bacteriotropic serum are not available in the absence of complement, we recommend the complement reinforcement of anti-meningococcal serum in the treatment of this disease, as likely to lead to a further reduction of the mortality under serum therapy.

References.

[1] McKenzie and Martin—"Serum Therapy in Cerebro-Spinal Meningitis," *Journal of Pathology and Bacteriology,* Vol. XII., 1908.
[2] T. J. Horder—*Cerebro-Spinal Meningitis,* page 49, 1915.
[3] Heinman and Feldstein—*Meningococcal Meningitis,* page 153, 1913.
[4] Hiss and Zinser—*Text-Book of Bacteriology,* 1914.

Post-Scriptum.—Since this article was written the condition of five of the patients has undergone some change.

(H) The eclamptic cases: This patient has recovered completely.
(I) This patient had a normal temperature, pulse, respiration ratio for seven days, and then a relapse occurred. She is now recovering.
(J) This patient, whose cerebro-spinal fluid was under 940 mm. water pressure, died five days later of respiratory failure.
(L) The optic neuritis in this case has since disappeared.
(N) This patient has since recovered completely.

The final analysis is as follows: Of the acute cases, three patients have died, six have recovered completely, and one has suffered a relapse, but is now doing well.

Of the chronic cases, one patient died, two recovered completely, and one is in the first stage of progressive mental degeneration, though the cerebro-spinal infection has passed off.

Reviews.

ENCYCLOPÆDIA OF MEDICINE.

Volume II. of the Encyclopædia Medica[1] consists of 677 pages, and includes the headings from "Aspiration" to "Chlorodyne." It is well up to the standard set in the first volume;[2] indeed, we think it should be rated a little higher, for while it retains its excellencies, it seems to present fewer instances of uneven treatment. We might, however, mention the heading "Atmocausis," as one instance of over-doing it. We find it most elaborately dealt with in the space of 3½ pages, written by Dr. Ballantyne, the general editor of the Encyclopædia. On the other hand, we would have liked to have seen a discussion of the subject of Castration in its various bearings, but the volume contains no heading devoted to this at all. We note that the writer of the article on "Cautery" mentions many uses to which different forms of cautery are applied, but forgets to mention the cautery operation for hæmorrhoids! A useful feature of the Encyclopædia is the full discussion of the meaning of medical prefixes such as "auto-," "caco-," "cata-," etc., where also numerous illustrative examples are quoted. In order to show the relative amplitude of treatment of various subjects, we give a list of some of the headings, with the number of pages devoted to each:—"Beri-beri," 8 pages; "Bier's method," 8 pages; "Blackwater fever," 12 pages; "Injuries and diseases of the bladder," 37 pages; "Physiology and clinical investigation of the blood," 45 pages, with several coloured plates; "Measurement of blood pressure," 3½ pages; "Diseases of bone," 42 pages; "Brain" (divided into sections), 142 pages; "Bronchitis," 34 pages; "Bronchiectasis," 8 pages; "Burns and scalds," 8 pages; "Injuries and diseases of bursæ," 8 pages; "Caisson disease," 5 pages; "Catalepsy," 5½ pages; "Cataract," 20 pages; "Catheters," 7 pages; "Development and clinical examination of children" 15 pages.

THE HEALTH ACT AMENDMENT ACT OF WESTERN AUSTRALIA.

It has been found impossible, owing to want of space, to publish the text of the Health Act Amendment Act, 1915, as announced last week, in this week's issue. The publication is therefore postponed until next week. We have held over an important letter by the Honourable A. Saw, of Perth, on the same subject, since reference to the text of the Act enhances the value of his communication.

[1] Encyclopædia Medica; 2nd edition, in 15 volumes. Vol. II., As-Ch, 1915: Edinburgh and London: W. Green and Son; Sydney and Wellington, N.Z.: Butterworth and Co. (Australia), Ltd. Royal 4to., pp. 677; illustrated. Price, £1.
[2] See *The Medical Journal of Australia,* December 11, 1915, p. 556.

The Medical Journal of Australia.

SATURDAY, FEBRUARY 5, 1916.

Laboratory Work in War.

Reports dealing with the excellent work conducted by Professor Charles J. Martin and his staff at Lemnos, added to the accounts of the laboratory work accomplished in France and in England, have provided ample proof of the utility of laboratory investigations in connexion with the wounds and diseases seen among the combatant troops. The laboratory can serve three important functions. It can check, confirm or correct the diagnosis made in hospital, ambulance or transport; it can guide the medical officers in treating the cases; and, lastly, it can indicate the direction in which successful prophylactic measures can be employed, and supply the material for this effort. We have already urged the employment of bacteriologists and bio-chemists in the Australian Army Medical Corps. Men skilled in laboratory methods are available, even if errors in judgement have resulted in the past in the misuse of these specially trained practitioners and in the loss of the life of one whose energies would have been of the highest value to the Empire, had they been employed in a reasonable manner. We refer to the late Dr. Mathison. A proposition has been made by a member of the *Société de Médecine de Paris* to equip motor laboratories for field work. He has suggested that these travelling laboratories could be made to carry sufficient electric power in accumulators to supply light, driving force for centrifuges and heat for incubators, etc., to render the laboratory independent of outside supplies. The chief function of such an institution would naturally be diagnostic, but by a system of coördination, sanitary and prophylactic work could also be carried out in this manner. Hitherto, the war has been characterized by marked immobility of the opposing forces. Fixed establishments have therefore proved more useful than in the case of wars in which the armies were ever on the move. It is, however, impossible to foretell what the near future may bring, and it is certainly not unreasonable to anticipate rapid advances of the Allies in the southern theatres of the war. But whether the laboratories are established in ambulances or in connexion with stationary hospitals or temporary hospital encampments, the necessity for the appointment of as many skilled bacteriologists and bio-chemists as are available is evident. The amount of sickness which has put Australian soldiers out of action is in strange contrast with the statements made by many responsible and irresponsible individuals, that disease is playing an insubordinate part in this great war, thanks to the advances in preventive medicine. The conflicting reports in regard to the incidence of enteric fever may be quoted in support of the appeal for greater facilities for scientific means of diagnosis. The differential diagnosis between paratyphoid and enteric fever is only possible in the laboratory, where the agglutination tests and the isolation of the Eberth or Schottmüller bacillus can be carried out. We learn of too many indefinite diagnoses, and are forced to the conclusion that an appeal to bacteriology would reduce their number considerably. There are many problems which can only be investigated in the laboratory, and the solution of a number of them may be of vital importance to the well-being of our fighting men. Specialism is needed for war, as has been ably demonstrated by a correspondent, who suggested, on January 8, 1916, the advisability of developing an orthopædic department to deal with soldiers who have suffered wounds to limbs of a reparable nature. It is true that the specialist, under ordinary conditions, loses his individuality to some extent when he joins the service; but in the case of the laboratory worker, the orthopædist in special units, and the radiographer, it is essential that these trained men should be allowed to concentrate their energies on the work in which they have made themselves proficient.

CREMATION.

Hygienists are permitted throughout the civilized world to dictate the conditions which must govern the destruction and disposal of organic matter arising from human existence. The interests of the community demand that excretions and waste products

shall be rendered inoffensive and innocuous. Were sanitarians consistent, the same laws would hold good in regard to the organic matter remaining of human bodies after death as apply to excreted organic matter. Various impediments have been allowed to interfere with this logical extension of a sound principle. Mr. E. V. Stephens, the Honorary Secretary of the Brisbane Cremation Association, detailed in his able article, entitled "The Case for Cremation," published in *The Medical Journal of Australia*, of January 8, 1916, these objections to a hygienic disposal of the dead. It is unnecessary to labour the question before a forum of medical practitioners. The principle will be recognized by all that the religious, the sentimental and the precautionary objections explained by Mr. Stevens are not valid arguments against adequate destruction of dissociating, putrefying organic matter. In the case of sewage, heat sterilization and incineration cannot be applied, on account of the unwieldly nature of the material and the costliness of the process, although the burning of coarse screened sludge has been applied with commercial success in numerous districts. Nevertheless, the most ideal method of dealing with putrescible matter is by heat destruction. This principle can be applied to human and animal bodies after death, and should be preferred to the usual method of allowing the decomposition and putrefaction to proceed slowly and incompletely, with undoubted dangers to the living. It may therefore be claimed that the case for cremation has been made out, and that it is the only healthy, reasonable and efficient system yet devised.

We publish in the advertisement pages of this issue the prospectus of a company which has for its objects the erection of a crematorium in the neighbourhood of Sydney. This company, which will be known as the New South Wales Cremation Company, Limited, has been formed by the members of the Cremation Society of New South Wales after several unsuccessful attempts to obtain Governmental assistance for the purpose of acquiring a site and establishing a crematorium, where the rational disposal of the dead could be carried out. Promises have been given time and again by successive Governments of financial support, but as is not uncommon in political life, excuses have been found for the non-fulfilment of these promises. As recently as 1911 the Government agreed to the proposal to include the sum of £5,000 on the draft estimates for the purpose. Later in the same year the estimates were amended by the elision of this item. In 1912, the Honourable George Black, M.L.A., on behalf of the Cremation Society, presented to the Assembly a petition signed by 14,000 persons. As the result of this petition, the sum of £5,000 was placed on the estimates for the year 1915-16. The item was, however, deleted for a second time. We understand that, but for the drain on Governmental Departments occasioned by the war, the sum asked for would have been placed at the disposal of the Society. Since no money is forthcoming from the State Government, the Society has felt that delay is no longer justified, and it has therefore been decided that the public shall be asked to contribute the necessary amount for the purpose. Applications have already been made for 2,000 shares, and, in addition, the late Dr. Posman has left the Society a legacy of £800 toward the erection of a crematorium. £1,300 have thus been secured. The subscription of the balance will follow, since the investment must be a sound one, in view of the wide recognition of the principle, and the fact that death finds everyone sooner or later. No modern city can afford to be without its crematorium, and the sooner every city in the Commonwealth is equipped in this way the better for Australia.

CAMP SANITATION.

The problem of rendering camps healthy places for their inhabitants has exercised the minds of the authorities since the introduction of modern methods of sewage disposal. In time of peace, when camps are not overcrowded, and when exact estimates can be made of the numbers of men enrolled, measures are adopted which have proved sufficient for the short period of annual training. But in this time of war, things have assumed a totally different aspect, and with the extension and multiplication of camps, and the enormous increase of the numbers of individuals concentrated within a small area at one time, the problem has become a difficult one. Lieutenant Colin C. Frye, F.I.C., F.C.S., of the 1st London Sanitary Company, has recently dealt with this question[1] from the point of view of the introduction of practical safeguards, and some of his recommendations might be adopted in the Commonwealth with advantage. He points out that the

[1] *Public Health*, December, 1915.

wastes of camps differ from ordinary wastes only in a few directions. Camp cooks waste grease and fat more than ordinary cooks do; the animal population is often higher in a camp than in a city or town under ordinary conditions. The principle adopted in the majority of camps is to deal with each class of waste separately. Dry rubbish is burnt in brick or turf incinerators, but the heat thus generated is usually wasted. The contents of the swill tubs are usually taken away by pig food contractors, and horse and mule dung is either removed by farmers or is burned with paraffin oil in manure incinerators. Human excreta is usually deposited in latrines dug in the ground near the camp, or, if pails are used, they are removed in tumbrils by contractors. When cresol is used for disinfecting the contents of pails, the material cannot be utilized as an agricultural dressing. Consequently, a large and very objectionable tip in the proximity of the camp results. Lieutenant Frye finds that reliance should not be placed on disinfecting chemicals. He claims that an ideal plan of working the latrine system would be to construct a combined latrine and tumbril cart, so that the latrine could be brought to the camp during the daytime and removed at night. He estimates that three motor-driven latrines of 12 seats each would suffice for an infantry regiment. Urine, sullage water and ablution water are disposed of by leading these fluids into soakage pits dug into the ground.

The methods in general use are open to grave objection. He has therefore given this matter careful consideration, and has arrived at the conclusion that in permanent camps the water-carriage system should be adopted, in order that the whole of the liquid waste, including excreta, could be dealt with in a modern sewage works. The cost would be less, unless extravagance were indulged in. Failing this method of instituting a sewage works with water carriage, he advocates a small sewage purification plant, for the treatment of sullage water, urine, etc. This plant has to be somewhat complicated, but the process of purification by biological oxidation is not simple, and therefore he claims that a delicate adjustment of engineering works to chemical, physical and biological processes becomes necessary. His plant consists of a grease trap, a covered septic tank, with a bottom in the form of an inverted pyramid for the removal of sludge, a small mixing tank for chemicals, four "fill and draw off" settling tanks, two dosing tanks, two deep percolating filters of coarse coke or clinker, an effluent settling tank, a general sludge sump, two shallow effluent straining filters of fine coke or clinker, and an area of land of considerable size for trenching the sludge.

Naval and Military.

We regret to find the name of Captain J. Bentley in the 137th list, issued on January 29, 1916, reported to be seriously ill in hospital.

In the *Commonwealth of Australia Gazette*, No. 12, bearing the date of January 27, 1916, certain extracts from the *London Gazette* are published. The material includes lists of officers, non-commissioned officers and men, whose services were considered by General Ian Hamilton, Commander-in-Chief of the Mediterranean Force, to be deserving of special mention. Under the heading "Australian Army Medical Corps" are the names of Colonel J. S. Beeston, Lieutenant-Colonel H. W. Bryant, Captain R. W. Chambers and Captain H. J. Fry. In a subsequent *Gazette* the announcement is made that His Majesty The King has been graciously pleased to give direction for the appointment of Colonel the Honourable Joseph Livesley Beeston, Army Medical Corps to the Most Distinguished Order of Saint Michael and Saint George, for distinguished service in the field during the operation at the Dardanelles.

The following appointments have appeared in the *Commonwealth of Australia Gazette*, No. 12, under date of January 27, 1916:—

Army Medical Corps.

Staff—

Colonel N. R. Howse, V.C., C.B., from appointment as Deputy Director of Medical Services, Australian and New Zealand Army Corps, to be Director Medical Services, Australian Imperial Force, with temporary rank of Surgeon-General.

Colonel (temporary Surgeon-General) W. D. C. Williams, C.B., from appointment as Director Medical Services, to be Deputy Director of Medical Services, Australian Imperial Force (United Kingdom).

Lieutenant-Colonel W. W. Giblin, to be Assistant Director Medical Services, Australian Imperial Force (United Kingdom), with temporary rank of Colonel.

Lieutenant-Colonel (temporary) R. J. Millard, to be Assistant Director Medical Services, Australian Imperial Force.

Honorary Major W. P. Norris, Australian Army Medical Corps Reserve, to be Assistant Director Medical Services, Australian Imperial Force (United Kingdom), with the temporary rank of Lieutenant-Colonel.

Captain T. E. V. Hurley to be Major. Dated 1st October, 1915.

Major T. E. V. Hurley to be Assistant Director Medical Services, Australian Imperial Force.

Captain D. S. Mackenzie to be Assistant Director Medical Services, Australian Imperial Force, with, the temporary rank of Major.

To be Majors—

Captain (provisional) W. E. Grigor, Australian Army Medical Corps.

Captain A. E. Morris, Australian Army Medical Corps Reserve.

Honorary Major G. Raffan, Australian Army Medical Corps Reserve.

To be Captains—

Captain (provisional) C. J. Wiley, Australian Army Medical Corps.

Captain (provisional) G. W. Bray, Australian Army Medical Corps.

Samuel Joseph Henry Moreau.

James Iver McIver Chirnside.

We have been informed that Colonel A .Sutton, Acting Deputy Director of Medical Services to the Australian and New Zealand Army Corps in Egypt, presided at the first meeting of the Anzac Medical Society. The paper read was on "Epidemic Catarrhal Jaundice." The meetings, we are informed, have been held every fortnight. At the time of writing, Colonel Sutton announced that the treatment of wounds was to form the subject of discusssion at the next meeting. Representatives of every unit, including Field Ambulance, Casualty Clearing Station, Hospital Ship, General Hospital and Regiment were to be present, and a good discussion was anticipated. The Society has over 100 members.

Abstracts from Current Medical Literature.

OPHTHALMOLOGY.

(42) Glass Workers' Cataract.

After a few general observations, Robinson describes the nature of the work of glass workers (*Ophthalmoscope*, October, 1915). It appears that the "bottle finisher" is the most exposed to the heat and glare of the furnace. His work is to take sufficient metal from the furnace to form the rim on the neck of the bottle, and fix it on. The "founder" and "gatherer" are also exposed to the furnace, but the "bottle-blower" does not look into it at all, and his eyes do not become cataractous. The finisher works five shifts of eleven hours, finishes 110 to 120 dozen bottles, or 2½ per minute. In three factories in the Sunderland district about 400 men are employed. Forty men are known to have cataract, and of these 37 are finishers. In two-thirds of these cases the eyes began to suffer by the age of 50 years. Of 114 superannuated members of the Glass Bottle Makers' Society in Yorkshire, 32.4% had cataract, and 29 out of the 37 patients were finishers. The opacity first appears at the cortex of the posterior pole, and is disc-shaped. Later on it cannot be distinguished from ordinary senile cataract. The wave length of radiant energy or light varies from lamna 600,000 beyond the red end of the visible spectrum to lamna 1000 beyond the violet end. Rays between lamna 3970 and lamna 7230 produce the sensation of light. Rays shorter than lamna 3970 are invisible and actinic, and those longer than lamna 7230 give rise to the sensation of heat, and are also invisible. If a substance is warmed it gives off the longest heat waves as the temperature reaches 500°, the longest visible red rays appear, and at higher temperatures it gives off white light and ultra-violet rays. Energy transmitted by a substance cannot alter it, but energy absorbed by a substance may produce changes in its physical state. Researches as to the transmission and absorption of heat rays have given discordant results. The most recent are those by H. Harbridge and Hill, who found that the iris obstructed all the heat radiation which fell upon it, that the lens absorbs only 12% of the rays which reach it, the most penetrating being those beyond the red. The question is then discussed, which are the rays given off by incandescent glass which cause the opacity in the lenses of glass workers. Crookes has confirmed earlier observations, that no X-rays of lamna .2 to lamna .55 are emitted from hot glass, so they can be excluded. Nor do the ultra-violet rays cause the disease, as few are given off from the bottle-makers' tank, and only few of these are absorbed by the lens. Further, the effects of ultra-violet rays, such as the glare from snow, from electric light, Finsen light, and the mercury vapour lamp, are characterized by photophobia, lachrymation, blepharo-spasm and corneitis, and iritis, quite dissimilar to the conditions seen in bottle makers. That the luminous rays are not the cause is shown by the absence of dazzling, blinding and retinal scotomata, as seen in eclipse blindness. By the method of exclusion, and from further consideration, the author concludes that it is the heat rays which are the cause of cataract. As a preventive, workmen should wear dark-coloured spectacles, or goggles, while at work; or a square of thick glass should hang in front of the furnace aperture. The most effectual preventive will be the adoption of the American bottle-moulding machine. Since 1909 Sir W. Crookes has been experimenting to discover the best protective glass for glass workers. No. 217 is the most efficient, consisting of fused soda glass 96.8%, ferroso-ferric oxide 2.85%, and carbon 0.35%. It cuts off 96% of the heat radiation, but, unfortunately, at present, it is practically unobtainable.

(43) Occupational Injuries of the Eye.

E. L. Collis considers that eye injuries are so prevalent and their prevention so unsatisfactory as to demand consideration (*Ophthalmoscope*, October, 1915). They may be divided into three groups: (1) Injuries from direct traumatism, such as flying fragments of stone or metal. These are legal "accidents." (2) Injuries due to foreign matter, as dust of certain chemical composition, such as that of pitch, lime, cement, or splashes of acid or alkaline fluids. (3) Injuries due to exposure of intense heat and light. These may be divided into acute and chronic cases, and are seldom considered legal "accidents." The Home Office publishes annually the accidents which occur in (1) mines and quarries, and (2) factories and workshops, and eye accidents form about 5% of the total. There were 9,300 cases of eye injuries in miners and quarrymen in 1913. Coalminers, as the result of injuries, suffer peculiarly from pneumococcal ulceration of the cornea. In factories and workshops there were 8,100 eye injuries in 1913. Among stonemasons, eye accidents formed 22% of all accidents. By suitable protection the majority of eye injuries could be prevented. (1) Eye-guards, to be effective, should prevent particles reaching the eye from in front, from either side, and from below. (2) They should be light, and allow of play of air, so that moisture does not condense on the glass. (3) They should not impede vision. (4) They should not become obscured by the impact of particles. Such eye-guards are easily obtainable. Pitch workers should wear motor goggles, with glasses replaced by crepe. At one factory in America, corrugating or scoring the heads of hammers almost eliminated accidents from flying nails. Operatives welding metal by the oxy-acetylene flame should wear goggles with darkened glasses, the glass being renewed every two or three months. Legge examined 513 workers in the manufacture of sheet glass and glass bottles, and found indications of posterior cortical cataract in 30% of those over 40. Suitable glasses should be worn, and Crookes, after careful research, has prepared different glasses for the absorption of various rays. First-aid instructions should be confined to the following: Apply eye drops (cocaine, 5% hydrarg. perchlor., 1 in 3000 in castor oil). Do not try to remove any particle which cannot be brushed away. Tie up with a clean handkerchief or bandage. Go to a doctor at once.

(44) Siderosis of the Eye.

According to Clegg, siderosis is a rare disease. Among nearly half a million patients at the Royal Eye Hospital, Manchester, during the fifteen years ending 1913, the diagnosis of siderosis was made only 13 times. It is usually due to the retention for a long time of a particle of steel or iron in an eye, but may also appear after severe intra-ocular hæmorrhage (*Ophthalmoscope*, October, 1915). The old dictum that an eye containing a foreign body must invariably be removed if the foreign body cannot be extracted, is not supported by experience in Manchester. It is true the eye will not tolerate the presence of copper or brass, but a particle of iron or steel may remain in the eye for years without ill effects. The conjunctiva, sclera and cornea may tolerate a particle of iron without siderosis arising, and this may be true also of the iris and lens. When the particle is in the vitreous, retina, ciliary body, or choroid, it would appear that siderosis may arise. The presence of iron in the tissues has been demonstrated by the Prussian blue method. Siderosis has been reported two months after entry of the iron. In all Kip's cases at least six months had elapsed, but in one case the metal had been present for 25 years without siderosis. The clinical appearances consist chiefly in a rusty-brown discoloration of the iris, presenting a marked contrast with the other iris if blue. Occasionally there is mydriasis, and the lens in later stages becomes opaque, with a yellowish-brown tinge, but the characteristic marks are the presence of deeper brown opacities towards the periphery in the sub-cortical zone. The eye may be quiet or show signs of uveitis in any degree of severity. The author gives full details of seven cases, but regrets that many of the patients have not returned for recent examination. In five cases the lens was removed by operation.

(45) Parmaud's Conjunctivitis.

Giri describes a case of mumps associated with neuro-retinitis and albuminuria. The patient complained of headache, giddiness and defective sight (*Ophthalmoscope*, September, 1915). Examination revealed double optic neuritis, with hæmorrhagic and exudative patches in the retina and macular region. His vision was reduced to hand

movements. The urine contained a heavy cloud of albumin. Five weeks later the discs showed signs of atrophy. Still later the patient complained of acute trouble in the right eye. The conjunctiva was markedly chemosed, and intensely injected; the preauricular gland was swollen, but no granulation or ulceration was present. In three weeks the condition subsided. The author considers the case as one closely allied to, if not identical, with Parmaud's conjunctivitis, in spite of the absence of granule formation and ulceration. These signs are not constant in Parmaud's malady. He excluded the possibility of contagion from animals, and attributes the conjunctival attack to the virus of mumps.

LARYNGOLOGY AND OTOLOGY.

(46) Vincent's Angina.

Wyatt Wingrave publishes a review of the present position in regard to Vincent's angina, without attempting to take all the recent articles on the subject into consideration (*Journ. Laryng., Rhinol. and Otology*, December, 1915). Although some difficulty may be experienced in limiting the application of the term, he accepts the simple definition that Vincent's angina is a fuso-spirillary lesion of the tonsil. It occurs in two forms; the first runs its course in a few days, while the second persists for many weeks. In either case there may be small, multiple plaques, corresponding to the lacunæ of the tonsils; or there may be a solitary, unilateral, circumscribed patch, like wash-leather, with slight œdema and shallow ulceration; or, lastly, there may be large, deep, irregular ulceration. The slough is characteristic, and can be distinguished from the membrane of diphtheria. It is sharply circumscribed, irregular in outline, and is formed on a necrotic area. When the slough separates, a fresh slough forms rapidly. There is a well marked fœtor, which is unmistakable. Pain is usually absent, and constitutional symptoms rarely are as profound as in diphtheria. The diagnosis depends on the bacteriological examination. The author deals with the morphology and tinctorial characteristics of the fusiform bacillus and *spirochæta fœtida*, associated with the condition. The spirochaete is slender and undulating, and possesses four to eight coarse, uneven curves. The ends are sharp. It resembles an eel, and can readily be distinguished from the *spirochæta pallida* of syphilis. Both the fusiform bodies and the spirochaetes are Gram-negative. When stained by Giemsa, granules may hide the forms. He advises negative staining as a reliable and simple method. They are present in large numbers in the superficial layers of the mucous membrane. In summing up the whole question, he concludes that Vincent's angina is a disease *sui generis*, and that, while the association of this condition with spirochaetes and fusiform bodies cannot be denied, it is not possible to prove that these micro-organisms are specific causal agents. He argues rather against the view that the condition is infectious, and is careful in expressing an opinion concerning the suggested relationship with noma. In regard to treatment, he finds that trikesol and formalin are reliable, while iodine, silver nitrate, chromic acid, ferric chloride and phenol cannot be recommended for this condition. Hydrogen peroxide, perborates and permanganates are useful as adjuvants, but are not thorough in their action.

(47) Draining the Lachrymal Sac and Nasal Duct.

In removing the anterior ethmoidal cells, H. P. Mosher has found that the curette was frequently stopped by the posterior edge of the ascending process of the superior maxilla, and when the specimen was examined later, it was seen that the nasal duct was laid bare at a situation where it escapes from the ascending process (*Larnygoscope*, November, 1915). He therefore devised a method of approaching the nasal duct in this way. He describes in some detail the anatomical relations of the maxilla, unciform process and lachrymal bone, and illustrates the text with very clear drawings. The operation is performed in the following manner: (*i.*) Under a general or local anæsthesia (he prefers the former), the anterior end of the middle turbinate is removed. the unciform process being exposed. The *punctum lachrymalis* is dilated or slit up. and a stiff probe is passed through the duct into the inferior meatus. (*ii.*) An incision is made along the posterior edge of the ascending process of the superior maxilla downwards and slightly backwards. It stops at the upper border of the inferior turbinate. A horizontal incision is then made from the lower end of the vertical incision, along the upper rim of the inferior turbinate, through the lower part of the unciform fossa. From the upper limit of the vertical incision a second horizontal incision is made across the upper limit of the fossa, over the unciform cell. The flap thus made is elevated and tucked backwards and downwards, so as to expose as much of the fossa as possible. (*iii.*) The lachrymal cell is curetted with a suitable curette. Only the upper anterior part of the unciform process, which forms the inner wall of the unciform cell, is removed. (*iv.*) The probe is then withdrawn and its point pressed inward, so that it escapes from the upper rim of the inferior turbinate through the inner wall of the nasal duct, into the unciform fossa. The probe is then swung strongly upwards, in order that the inner wall of the nasal duct from the inferior turbinate into the lachrymal sac and from the lachrymal sac to the top of Horner's muscle is laid open, leaving only 2 or 3 mm. of the inner wall unopened. The probe is then reintroduced, and while in position, the whole length of the posterior surface of the ascending process of the upper maxilla is curetted with a small curette, having its bowl at right angles to the shaft. The probe protects the mucous membrane of the outer wall of the duct. (*v.*) The probe is withdrawn and the nasal duct is widened by biting away the anterior part of the inner wall of the canal. The flap is then sutured by passing a ligature through the punctum. The author has performed the operation three times on the living subject with good results.

(48) The So-called Capsule of the Faucial Tonsil.

D. R. Patterson has made a careful study of the anatomy of the faucial arrangement in man and in some lower animals, and has come to the conclusion that the so-called capsule of the tonsil is merely a portion of the intrapharyngeal fascia or aponeurosis. G. H. Makuen, while admitting that he had not made any embryological or histological investigations, arrived at the same conclusion as the result of his clinical observations (*The Laryngoscope*, October, 1915). He finds that it is not a true capsule at all, and that it consists, in part at least, of the portion of the intrapharyngeal aponeurosis, to which the tonsil attaches itself in the course of its development. The aponeurosis is a broad membrane attached above to the base of the skull, and extending downwards to the region of the œsophagus. It separates the tonsil and the faucial pillars from the superior constrictor muscles. The anterior fold is protruded in front and below the tonsil, and is known as the *plica triangularis*. During development the tonsil appropriates the connective tissue and the musculo-fibrous tissue with which it lies in contact, and, in adult life, it becomes firmly attached to this membrane. A complete extracapsular tonsillectomy must leave a window resection of the intrapharyngeal aponeurosis, exposing the palatal pillars and the superior constrictor muscles, and opening up avenues of infection in the deeper regions of the neck. He prefers an operation which he terms "intracapsular tonsillectomy." This operation can be performed easily and accurately with an ordinary snare in connexion with Sluder's original instrument.

(49) Granuloma of the Vocal Cord.

St. Clair Thomson records the case of a man, aged 40, who complained of hoarseness of two months' duration (*Journ. Larnyg., Rhinol. and Otology*, November, 1915). There was a pedunculated, mobile tumour, adherent to the free edge of the right vocal cord, just in front of the *processus vocalis*. The growth was ovoid smooth, and purplish, and the unattached extremity was slightly yellowish and puckered. It fell below the glottis during inspiration. There were some enlarged glands at the angle of the jaw. The growth was removed, and, on examination, was found to be a granuloma. No recurrence has occurred. The author points out that the presence of enlarged glands need not imply malignancy. Granulomata are very rare, and no record exists of such a growth in the larynx.

British Medical Association News.

MEDICO-POLITICAL.

A meeting of the Council of the Victorian Branch was held at the Medical Society Hall, East Melbourne, on January 13, 1915, Dr. A. V. M. Anderson (the President) in the chair.

The Secretary was instructed to address letters of sympathy to the relatives of the late Drs. F. Miller Johnson, D. McM. Officer, John Small and Charles A. Stewart.

The following gentlemen were elected members of the Branch:—

Dr. Andrew Norman Dickson (Brighton Beach).
Dr. Malcolm Talbot Hamilton (Albert Park).
Dr. Maurice McKenna (Footscray).
Dr. Sydney John Newing (Ascot Vale).
Dr. Edward Spring (Moonee Ponds).
Dr. Septimus George Strahan (Moonee Ponds).
Dr. James Webb (Northcote).

A meeting of the Council of the Victorian Branch was held at the Medical Society Hall, East Melbourne, on January 26, 1916, Dr. A. V. M. Anderson (the President) in the chair.

Surgeon-General Fetherston, the Director-General of Medical Services, promised to supply the Council with information asked for in respect to pensions and compensation rights of medical officers accepting military service in Australia or abroad. The claims in respect to the late Captain Rothera and others would shortly be determined. He also assured the Council that it was not the intention of the authorities to reduce the pay of medical officers, and that any action that might have been taken had been stopped.

It was arranged that the following papers should be read at the meeting to be held on February 2, 1915: "Notes on Difficulties and Trials of Administration of a Field Hospital," by Lieutenant-Colonel Harry W. Bryant; "Experiences with the Australian Voluntary Hospital in France," by Lieutenant-Colonel George Horne.

In view of the uncertainty that exists in the minds of men volunteering for service abroad or at home concerning the loss of practice during their absence by the settling of other men in their district, it has been decided by the Council of the Queensland Branch to enforce the following regulation:—

> That no member shall settle in the district or cut up the practice of a member absent on military duty, without first consulting the Council of the Queensland Branch of the British Medical Association, as to the conditions obtaining in the district, and obtaining permission from the Council to continue or start practice in such district.
>
> Any infringement of this regulation will be sternly dealt with, in order to protect the volunteers on active service.

The following have been nominated for membership to the New South Wales Branch:—

Dr. James E. Webb, Education Department, Sydney.
Dr. Henry G. Leahy, Sydney Hospital, Sydney.
Dr. William Robert Aspinall, Sydney Hospital, Sydney.
Dr. Callander Wade Sinclair, Sydney Hospital, Sydney.
Dr. Peter J. B. Murphy, Sydney Hospital, Sydney.
Dr. Cecil Gordon Allen, Sydney Hospital, Sydney.
Dr. George Wade Sinclair, 31 Kangaroo Street, Manly.
Dr. F. P. M. Solling, 61 Woolcott Street, Sydney.
Dr. John Murray Gibbes, Nimini.
Dr. F. G. Connor, Sydney Street, Chatswood.

Medical Societies.

(Affiliated with the British Medical Association.)

CENTRAL SOUTHERN MEDICAL ASSOCIATION, N.S.W.

The Annual Meeting of the Central Southern Medical Association was held on January 21, 1916, at the Commercial Hotel, Goulburn, Dr. D. T. Harbison (the President) in the chair.

The Honorary Treasurer's report and balance sheet was received and adopted. A small credit balance was shown.

Dr. G. A. Buchanan moved that the existing rules of the Association be rescinded, and that the new uniform rules, prepared by the Council of the New South Wales Branch for the local medical associations, be adopted *in toto*, and that the number of members of Committee, in addition to the President and Vice-President, be nine instead of eight.

The motion was seconded by Dr. Williams and carried.

Dr. G. A. Buchanan moved that the Association hold its general meetings every six months instead of every four months.

The motion was seconded by Dr. Gillespie and carried.

Dr. Harvison moved that consideration be given to the whole subject of bush nursing. This motion was seconded by Dr. Buchanan, and was carried.

Dr. Harvison, of Cooma, pointed out that in his district the bush nurses interfered with the work of the medical profession. He instanced cases in which the nurses carried out work which should have been undertaken by a qualified medical practitioner.

After further discussion, it was resolved that the Honorary Secretary be instructed to write to the Branch Council, with the view of urging the Council to insist on the preparation and publication by the Council of the Bush Nursing Association of rules and regulations defining the work of the nurses. These rules and regulations were necessary for the information of practitioners, since, at the present time, it was not known what the duties of the bush nurses were.

Dr. S. W. Morton proposed and Dr. Buchanan seconded a motion to the effect that the Association should adopt resolutions necessary for organizing the profession within its area for the purpose of arriving at some arrangements whereby the patients of members undertaking military duties should be attended during their absence on active service, and restored to them on their return to civil practice. The motion was carried.

Several schemes which had been prepared for this purpose were explained and considered. In particular, the members discussed the scheme evolved by the Sub-Committee appointed for the purpose at the last general meeting. A valuable discussion followed, but no final determination was arrived at.

Dr. English moved that a Standing Sub-Committee, consisting of Drs. Buchanan, Williams and Hogg be appointed and that it be a reference to this sub-committee to consider ways and means of carrying out "war emergency organization," and to draw up a scheme for submission to the members of the Association. The motion was seconded by Dr. Gillespie, and was carried.

The following were elected office-bearers for 1916:—

President: Dr. P. Blackall, Queanbeyan.
Vice-President: Dr. R. D. MacMaster.
Members of Committee: Drs. G. A. Buchanan, S. W. Morton, W. S. Harvison, A. P. Gillespie, J. English, D. T. Harbison, W. A. H. Burkitt, L. Conroy and A. G. H. Colquhoun.
Auditor: Dr. R. O. Williams.
Delegate: Dr. G. A. Buchanan.
Council Representative: Dr. G. A. Buchanan.

Dr. D. C. Henry, of Crookwell, was elected a member, on the motion of Dr. Conroy, seconded by Dr. Buchanan.

In the evening, the retiring President (Dr. D. T. Harbison) read notes on several interesting cases of epidemic cerebro-spinal meningitis, on the surgical treatment of pyloric stenosis, and on some complicated cases of measles.

A general discussion on divers clinical subjects ensued. Many of the members reviewed cases of interest from their practices, bearing on the subjects introduced into the discussion.

Public Health.

THE HEALTH OF VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the week ending January 23, 1916:—

	Metropolitan. Cs.	Metropolitan. Dths.	Rest of State. Cs.	Rest of State. Dths.	Total. Cs.	Total. Dths.
Diphtheria	28	3	17	0	45	3
Scarlatina	10	0	10	0	20	0
Enteric Fever	9	1	23	0	32	1
Pulmonary Tuberculosis	20	5	18	10	38	15

The following is the return of epidemic cerebro-spinal meningitis cases notified to the Board during the week ending January 23, 1916:—

	Metropolitan Area. Cases.	Rural Districts. Cases.	Total Cases.
Military	—	—	1
Civil	4	2	6

INFECTIVE DISEASES IN QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the week ending January 22nd, 1916:—

Disease.	No. of Cases.
Diphtheria	34
Scarlet Fever	3
Typhoid Fever	63
Phthisis	9
Varicella	2
Cerebro-Spinal Meningitis	2
Erysipelas	3
Total	116

INFECTIVE DISEASES IN WESTERN AUSTRALIA.

The following notifications have been received by the Department of Public Health, Western Australia, during the week ending January 15, 1916:—

	Enteric Fever.	Diphtheria.	Scarlet Fever.	Phthisis.	Erysipelas.	Septicæmia.
Fremantle	—	1	—	—	—	—
Melville	—	1	—	—	—	—
Subiaco	1	—	—	—	—	—
Perth	2	7	—	3	—	—
Guildford W.	—	—	—	1	—	—
Midland Junction	1	—	—	—	—	1
Victoria Pk.	1	—	—	—	—	—
Kalgoorlie	1	1	—	—	—	—
East Cannington	—	1	—	—	—	—
Bellevue	1	—	—	—	—	—
Wagin	1	—	1	—	—	—
Northam	1	—	—	—	—	—
Swan View	—	—	—	1	—	—
Harvey	—	—	—	—	1	—
Meenaar	2	—	—	—	—	—
Kunnanalling	—	1	—	—	—	—
	—	—	—	—	—	—
	11	12	1	5	1	1

SMALL-POX IN NEW SOUTH WALES.

The following cases of small-pox have been reported from the Department of Public Health, New South Wales, during the week ending January 30, 1916:—

	Cases.
Newcastle	1
Waratah	1
Forster	1
Auburn	1
Total	4

INFECTIOUS DISEASES.

In an official report, issued on January 14, 1916, by the Federal Quarantine Bureau, the distribution of plague, cholera, small-pox and yellow fever is set forth.

Plague.

During the period from October 24, 1915, to November 6, 1915, there were 9,122 cases and 6,387 deaths in India. During the period from November 14 to November 27, 1915, there were 10,076 cases and 7,027 deaths.

In Ceylon, 22 cases were reported between October 17 and December 4, 1915. In Egypt there were 13 cases, with 10 deaths, between November 5 and December 9, 1915. Eight cases were detected in Mauritius during the period between October 1 and November 4, 1915. In the Straits Settlements there were three cases between December 3 and December 17, 1915, and one death. On case occcurred at Quayaquil, in Ecuador, during September, 1915. There were no further cases in New Caledonia, the Philippine Islands, or South Africa. No reports have been issued from Hong Kong.

Cholera.

Since the last report, 50 cases of cholera and 37 deaths have been reported in the Dutch East Indies. The last case of cholera notified in the Philippine Islands occurred on August 6, 1915, and that in the Straits Settlements on October 9, 1915.

Small-pox.

The number of small-pox cases reported from the Dutch East Indies was 21. There were nine deaths. Three cases occurred between October 28 to December 13, 1915, in the Straits Settlements, and one death. There was one case of varioloid on November 10, 1915, in the Philippine Islands.

Yellow Fever.

Two cases of yellow fever have occurred in Ecuador during the month of September, 1915. One of them proved fatal.

SMALL-POX PRECAUTIONS.

The Victorian Government decided on January 14, 1916, to abandon the inspection of vessels arriving from New South Wales, which had been introduced as a precautionary measure against the outbreak of variola in Maitland and the Newcastle district. This decision, it is stated, has been arrived at in response to representations made by the leading shipping companies, which have been subjected to inconvenience arising from the delay occasioned by the procedure. Railway passengers are not inspected, and the Cabinet has recognized that there is no justification for the continuation of this precaution.

SCHOOLS AND SCHOOL CHILDREN IN NEW SOUTH WALES.

Second Annual Report of the Principal Medical Officer of the Department of Public Instruction.

The report of the Minister of Public Instruction of New South Wales for the year 1914 bears the date of July 27, 1915. This report, together with the reports of the heads of the various Departments with appendices, was printed on September 2, 1915, and is now available to the public. The main part of the volume, which covers 153 pages of foolscap, contains information of importance and interest to educationalists and to students of social economy. The subjects of hygiene and the physical welfare of the school children is contained in the Principal Medical Officer's report, which occupies 12½ pages, exclusive of tables. The report is enhanced by the inclusion of a clear map, to which reference will be made below. The report deals with three distinct branches of work. The division, however, is not maintained in the report.

Medical Inspection of School Children.

The total enrolment of day schools during 1914 is given at 277,392. Of these children 94,198 were examined medically during the year. It is stated that this constitutes a record for Australia, representing just under one-third of the children to be examined. The fact that in many instances vast stretches of country had to be traversed, at times without the aid of a railway, forms an ample explanation for the limitation of the work. In the map indications are given of the district in which the school medical inspectors have carried out their work. It appears that while the greater part of the State has received their attention, several important towns, such as Grafton, Kempsey, Taree, Boorowa, Adelong, and Adaminaby have not been included.

In the metropolitan area 24,195 public school children have been examined. Of these 12,940 have been notified as suffer-

ing from physical defects. This represents 53.4% of the total. In addition 3,778 private school children were examined, and 2,142 were found to be defective. The percentage is therefore 56.6. In the large country towns the number of children examined in the public school was 30,840, and 22,314 had physical defects; this represents 72.3%, while 9,999 children in the private schools were examined, and 7.179, or 71.7% were suffering from physical defects. In the small country towns and villages 21,388 children in public schools were examined, and 10,933, or 51.1% were notified as suffering from physical defects. In the private schools 1,885 children were examined, and 852, or 45.1% were found to be defective. It thus appears that in the public school 76,323 children were examined in various parts of the State, and of these 46,187, or 60.5% were found to be suffering from physical defects sufficiently severe to require notification. The total number of children inspected in private schools was 15,662 and 10,173, or 64.9% were found to be suffering from physical defects. A footnote is added to the effect that the figures for private schools are only approximately correct.

In 1913 59% of the public school children were found, upon examination, to be physically defective.

The hair was found to be in an unsatisfactory condition in 6.2% of the children examined. This comparatively high incidence of pediculosis is attributed in part to the habit of allowing girls to wear long hair, hanging loose. The intention of the Department to make a special effort to instruct children in matters concerned with cleanliness is announced. Defects of vision were discovered in 13,116 public school children, and 2,404 private school children. Pathological conditions of the eyelids were found in 1,167 public school children and in 230 private school children. In addition, there were 786 other defects of the eyes among the public school children, and 163 among the private school children. Defects of hearing were noted 8,030 times in public school children. In 1818 the deafness was marked, and in an additional 402 other defects of the ears were detected. Among the children in private schools defective hearing was present in 1646, and was marked in 425. Other defects of the ears were noted 72 times. The tonsils were enlarged in 11,443 children in public schools, and in 8,418 there were both hypertrophy of the faucial tonsil and adenoid vegetation. Adenoid vegetations alone were diagnosed 7,168 times. The total number of defects of the nose and throat amounted to 30,284. In the private schools enlarged tonsils only were met with in 2,526 cases, enlarged tonsils and adenoid vegetations in 1,595 cases, and adenoid vegetations in 1,558 cases. The total number of defects of the nose and throat was 6,232. Dental defects affecting the permanent teeth were discovered in 30,642 children in public schools, and 6,982 children in private schools. The milk teeth were affected in 34,643 public school children, and 6,509 in private school children. Round shoulders were reported 2,404 times in public school children and 493 times in private school children. Scoliosis and other forms of spinal curvature were met with only 59 times among the public school children and 12 times among the private school children. One hundred children in the public schools had some type of deformity of the limbs, whereas 5,308 children in private schools showed a similar defect.

Among the public school children 748 were suffering from defects of the skin, 37 from hernia, 20,682 from enlarged glands, 1,987 from anæmia, 4,967 from defective nutrition, and 900 from defective speech. Among the children in the private schools, the number of defects in each of the six classes was 178, 6, 4,905, 352, 779, and 164 respectively.

The travelling hospital was sent to the district south of Wagga Wagga. The medical officers of this hospital discovered 516 cases of ophthalmic defects, 182 defects of the ear, 744 defects of the nose and throat, 1,345 defects of the teeth, 19 deformities, 1,078 enlarged glands, 20 cases of anæmia, 32 of defective nutrition, 6 defects of speech, 4 defects of skin, and 3 cases of hernia. The number of inspections carried out by the medical officers of the travelling hospital are in addition to those entered under the headings public schools and private schools.

A special table is given, showing the number of children vaccinated during the year 1914. Of the 94,198 children examined, 37,573 had been subjected to vaccination. It was successful in 33,109 children, or 35.14% of the total number. The Principal Medical Officer points out that the proportion of children vaccinated is considerably less in the back country than in the metropolitan area.

School Hygiene.

It appears that the number of schools open at any time during the year was 3,537. During the year 1,087 public schools were subjected to a sanitary inspection. The Principal Medical Officer expresses the opinion that while many of the buildings were not ideal, the schools in the State compared favourably with those of other countries. Improvements in sanitary arrangements were not effected as rapidly as could be wished, because the amount of money at the disposal of the Department was limited, and difficulty was experienced in securing labour in the country districts. In regard to the question of closets, he points out that in country areas, where neither a sewerage system nor a night soil removal service exists, cesspits are a necessity. He is inclined of the opinion that cesspits are less dangerous than pan closets, unless there is a duplicate pan service, a satisfactory pattern of pan with a water-tight lid, and a properly conducted department with trained men for the emptying, cleansing, and steaming of the pans. He calls attention to one reform which has been instituted, viz., that of lowering the standard height of closet seats.

Towels and drinking vessels for common use are still found in a large number of schools. In one country school the Medical Officer had succeeded in enlisting the intelligent co-operation of the teacher and the parents, with the result that each family provides its own hand towel, wash-basin, and hair brush, and each child is given its own tooth brush.

No reference is made in the report to the nature of any structural alterations in the school buildings, to the question of the lighting of class rooms, of the type of seats and desks, and of analagous chapters in school hygiene.

Outbreaks of diphtheria, scarlatina, varicella, pertussis, enteric fever, paritits, morbilli, variola, and ophthalmia occurred during the year. Pertussis affected 8,454 children, varicella 2,927, morbilli 2,461, diphtheria 1,942, scarlet fever 693, enteric fever 259, parotitis 295, variola 89, and ophthalmia 934. In addition 869 children were found to be suffering from ring-worm. It thus appears that 8.1% of the children attending the primary public schools were excluded for a time on account of one or other of these infective processes. The exclusion from school attendance was extended to 7,651 children who had been in intimate contact with the infected pupils. It thus appears that 11.4% of the children were excluded from the school for this reason. The total number of school weeks lost works out at 125,581. The Principal Medical Officer records his opinion that only in exceptional circumstances is the closure of a school necessary or advisable. He does not state the number of times the closure has been resorted to.

Treatment of Defects.

It is stated the "the most notable extension in 1914 was the provision made for treating of physically defective children in those parts of the State where it is difficult or impossible for the children to obtain treatment otherwise." The treatment has been undertaken by the Medical Officers attached to a Travelling Hospital, to a Travelling Ophthalmic Clinic, and by Dental Officers attached to a Dental Clinic in Sydney, and a Travelling Dental Clinic.

The Travelling Hospital was started with a staff of two Medical Officers and a Nurse, and later a Dentist was added. The Principal Medical Officer makes the following statement:—"This Hospital works in those parts of the State where there are not resident doctors or dentists." On reference to the map, it is seen that the Travelling Hospital visited the following places:—Wagga Wagga, Henty, Tumbarumba, Corowa, Germanton, and several places within easy reach of Albury, Urana, Lockhart, etc. It is stated that the school is visited and the children examined medically. "The treatment of all conditions easily found is then undertaken." Defects were found in 886 cases. Treat-

ment was given by the Medical Officers and Dentists attached to the Travelling Hospital to 402 children, while 43 children were treated elsewhere.

The Travelling Ophthalmic Clinic has been taken to several places in the south-east and north-east of the State. The largest number of places visited are in the south-east. The Clinic travelled as far west as Wyalong, to the south to Albury and Bombala, and to the east to Taralga and Queanbeyan. In addition it visited Inverell, Bingara and Warialda. The refraction is worked out in each child, and any errors detected are remedied. In addition common eye troubles are treated. It is stated in the report that the children treated include those attending schools in neighbouring villages as well as the schools visited. The Travelling Ophthalmic Clinic had been in operation for about four months at the end of the year, and during this period 2,558 children were treated at the Travelling Hospital and the Travelling Ophthalmic Clinic. The Principal Medical Officer claims that the scheme for treatment, although more or less experimental, has proved most successful.

It appears from the table that 30.5% of the children at public schools found to be defective were subsequently treated, and that 16.7% of those at private schools were also treated. These figures are said to be too low, because the full returns had not been received in time for inclusion in the report. The number of children treated in the metropolitan area was relatively lower than that treated in the preceding year, whereas the number treated in other parts of the State was relatively higher. It appears that no attempt was made to arrange for the adequate treatment of the children at hospitals. Had such arrangement been made, it might have been possible to have increased the percentage of the public school children within the metropolitan area who received treatment from 35.7% to nearly 100%.

The Principal Medical Officer announces the necessity of adding a second dentist and a dental assistant to the existing Travelling Hospital, to establish two more Travelling Hospitals for the back country, and two more for the larger country towns, to extend the Metropolitan Dental Clinics so as to provide three full-time dentists, and the necessary assistants, and to establish a clinic in Sydney for the general treatment of school children.

Obituary.

FREDERICK MILLER JOHNSON.

Frederick Miller Johnson, whose untimely death was announced in last week's issue, was the eldest son of the late Mr. J. T. Johnson, of Hobart, Tasmania, and the grandson of the renowned physician, Sir William Gull. He was born in Hobart in 1863. His school education was conducted at Hutchin's School, and on its completion he commenced his medical course at the Melbourne University in the year 1881. The latter part of his student days were spent in Edinburgh, where he graduated, taking the degrees of M.B., C.M. After registering, he proceeded to London, where he held several hospital appointments. Continuing his post-graduate studies, he applied himself more especially to eye work, and for this purpose visited Heidelberg, Munich and Vienna. He returned to Melbourne in 1889 and settled in South Melbourne, where he soon established a large general practice. In addition to his private practice, he was associated with many public offices, one of the most important of which was connected with Queen's Memorial Infectious Diseases Hospital at Fairfield.

In March of last year he volunteered for service, and left for the front in June as Captain, attached to the 6th Field Ambulance. It appears that he was actively engaged in Gallipoli for several months, and in September he was appointed Divisional Sanitary Officer. According to his last letter, dated May 28, 1915, he had attained the rank of Major. The following abstract from a letter from Major J. C. Stewart, of the 5th Battalion, A.I.F., dated December 1, 1915, contains an account of his death on November 27:—

> "He (the Turk) has some big guns now, and two days ago gave us a very bad time, putting 2,000 shells into us, mostly into Lone Pine, which suffered very heavily. Included in the casualties was Major Miller Johnson, of South Melbourne, who will be very badly missed. He was in the Pine area inspecting sanitary arrangements, and when the bombardment started could not get out, as the communication saps were blown in. He was buried by a 9-inch shell, and died shortly after they got him out. He was buried yesterday in the little cemetery, within a stone's throw of my 'dug out'."

His letters home, written during the weary winter days in camp, on the transport, and in the trenches at Gallipoli, rang triumphantly of his joy at having found a chance of "doing his little bit." He has contributed to the Empire's greatness by doing his duty, with a smile on his face, without sparing himself, and with that wonderful exhibition of bravery which has made Australians famous. It cost him his life.

Frederick Miller Johnson made it a point of honour to keep himself well abreast of the times in matters connected with medical science, and more especially with laboratory research. He frequently applied the knowledge gained in this way to practical purpose when dealing with an anxious case. He was a valuable member of the Council of the Victorian Branch of the British Medical Association, and his opinions were always listened to with attention and respect. He made many warm friendships with his colleagues, and was loved and trusted to an unusual extent by his patients. In private life he never failed to help a lame dog over the stile. His life was full. He volunteered at the very height of success in his professional career. His only son was already with the forces in Egypt. His death robs us of an exceptionally able practitioner, a man of fine, strong, upright character, and one who carried out unostentatiously the highest ideal of our calling.

Correspondence.

"THE HEALTH MINISTRY OF NEW SOUTH WALES."

Sir,—In your issue of the 25th December, under the caption above quoted, there appeared a leaderette in which I was charged with indolence, inactivity, and obstruction, in so far as the Public Health policy of this State is concerned. Perhaps you will permit me to quote a portion of the article in question, and to proceed then to a categorical refutation of all that therein is implied.

Here are the vague, but nevertheless cruel and cowardly generalities of which I complain, and which I challenge you to substantiate by the presentation of specific instances—

> "It has long been obvious that the masterly inactivity of the Minister of Public Health of New South Wales, following on the almost kaleidoscopic motility of his predecessor, would lead to an abrupt alteration in the constitution of the Cabinet. The paralysing effect which his obstructive and indolent policy has had on the work of the permanent officials of the Board of Health is becoming more and more apparent. Rumours are abroad of changes which are said to be imminent. While there does not appear to be much foundation for any of the current rumours, some change is essential, and may be anticipated within a short time."

Here let me preface my refutation by saying that the loss of one or both of my ministerial offices would not greatly concern me, but that I am deeply stirred by the malignancy and untruthfulness of a statement which impugns my energy and industry, my sincerity and enthusiasm.

It is true that the work done by the Health Department during the year just ended did not equal, in some respects that of 1912 or 1913, but it is also true that I am not to blame for the falling off, which would have occurred no matter who was Minister, and which is due to these facts:—(1) Lack of money; (2) dearth of doctors; (3) scarcity of nurses; (4) dearness of drugs.

I well remember that Mr. Flowers once said to me: "I will make it difficult for anyone to follow me at the Health Department." He did more, he made it also impossible for himself to remain, since he said at a later period, about three months before I succeeded him: "I will have to get out of this, I can neither get the money I need to keep my promises, nor for new developments."

Had he remained in office till now, many lavish promises would long 'ere this have come home to roost, and his "kaleidoscopic motility" (whatever that may mean) would, by swift transition have become "masterly inactivity," or even "obstructive indolence"; that is if anyone, for purely personal reasons, desired to stab him in the back—semi-officially.

I have inherited many financial commitments which no Minister for Health could meet at present. Personally, I have made no promises which I cannot honour; nor will I leave behind obligations of my own making which will prove beyond the resources of my successor. I am glad above all things that I am not responsible for the erection of a hospital in a sparsely-populated district—at a cost of nearly £8,000—only four miles from a long-established hospital which could have been completely modernized and enlarged at a cost of £2,500, since the first results of this course must be a lack of money for the improvement of the older institution and a subdivision of the contributing area which places both hospitals outside of the self-supporting category. Misdirected and lavish expenditure can never be regarded as a virtue in those who handle the public funds, save by those who estimate personal interest above the well-being of the community.

When I took office as Minister for Public Health, on the 28th April, 1915, I was faced—when I had expended from the Public Works Fund some £10,000 to which I was committed by my predecessor—by a financial shortage in this direction, and also with regard to special grants, and was compelled to tell all suppliants that their needs must be held over until the next year's Estimates were passed. I was asked by the Colonial Treasurer, however, to eliminate from my Estimates all new items; nevertheless—on considering the commitments of my predecessor with regard to the construction, extension, repair, and alteration of hospital buildings—I found that at least £202,664 would be required from the Public Works Fund for these purposes. I was asked, however, to cut down this sum to the bone, and therefore reduced it to £75,966. Judge of my despair when the Treasury reduced this sum to £31,500, of which total £22,500 was earmarked on the printed Estimates for Newcastle, Albury and Parramatta Hospitals. Which is to say that I had to get through the year on £9,000 (apart from unexpended balances) for all the other hospitals of the State—a thing so impossible that I have already overrun the constable to the extent of £832. To recapitulate: The sum of £202,664 was required for works purposes; I asked for £75,966; I received £31,500, or about one-seventh of the needed total. Then, for private and personal reasons, I am accused of indolence and obstructiveness!

Here it might be said that the amounts specifically mentioned by me in my detailed statement had included Grafton Hospital, towards additions, £2,000; North Sydney, towards isolation block, £5,000; and South Sydney, for extension of wards and for a venereal clinic, £5,966. Speaking of venereal clinics, it had been intended to extend the splendid work already done at the Royal Prince Alfred Hospital, where from 1,000 to 1,500 patients are treated weekly, by installing clinics at the Sydney, South Sydney, and Newcastle hospitals, but this has been made impossible, not only by reason of the fact that no money is available for the erection of the buildings, but by the further circumstance that the skilled doctors needed are not to be had, and by the additional fact that "Salvarsan" is no longer to be obtained, save at prohibitory prices, while "Galyl" has neither proved its excellence yet, nor come to hand in sufficient quantity for continuous use. If the scarcity of doctors be doubted, it may be said that Hillgrove has vainly advertised for a doctor during the past three months, and that junior medical men are badly wanted at the Coast and Liverpool State Hospitals, while of the four subsidized doctors already established and in practice, one has left to become locum tenens to a doctor who is at the front, and we have so far been unable to find anyone willing to take up subsidized duty at Ardlethan, Gulargambone, Newnes, Oberon, Pilliga, Taralga, and Whitton, though I was able to induce a doctor to remain at Tea Gardens through State assistance.

In the matter of Bush Nursing Homes, I have added four (Nundle, Batlow, Reid's Flat, and White Cliffs) to the nineteen in existence when I took office. Although slightly increased provision was made on the Estimates for bush nurses, however, I have been unable to utilize to the full the money available because of the exodus of over 350 trained women to the front. So great indeed has been the desire of nurses to seek the scene of battle, that early in June I was reluctantly compelled to refuse to keep open positions for those who followed the flag, for the reason that capable women refused to fill temporarily the vacancies thus created.

Baby clinics have also been handicapped by the lack of pence and of skilled nurses. Since I took office only two have been opened, namely Mascot and St. Peters, but I am considering others.

Some months ago I endeavoured to induce various hospitals to increase the output of nurses by imparting primary instruction at certain hours during the day, and excellent work in this direction has been performed at the Coast, Sydney, and other hospitals, but so far no additional trained women have thus been made available.

I have given further exhibitions of my alleged indolence and apathy by paying week-end visits, instead of resting and holiday-making, to no fewer than thirty-three hospitals, of which some have been visited twice and thrice. I have also, greatly daring, delivered several lectures on health subjects, and have been warmly complimented on the success thereof. In addition I have received twenty-five deputations on health matters, and have passed four hospital bills through Parliament, for the better control of the Institutions concerned, and to enable them to increase their areas of contribution, while I have bills already prepared to assist other hospitals in this direction, and for the registration of nurses, the suppression of juvenile smoking, the

supervision of dairies, the amendment of the dentistry laws, and more rigid inspection of food and drugs.

In addition I have diverted the whole energies of the Health Department to the assistance of the military authorities. Some time ago I gave instructions for the opening of a recruiting depot at the office of the Director-General of Public Health. It was opened on the 3rd August last, and between that date and the 31st December no less than 6,814 applicants for enlistment were examined, and of these 5,560 were accepted. Which means that, apart from the various military men who assist there, the night work has been done by a clerical staff varying in number from 6 to 12, and a medical staff which varied from 4 to 7. We have also treated 115 recruits at the State Hospital and 74 at the Coast Hospital. The Dennistone Convalescent Home at Eastwood has also been utilized for the reception of over 50 recruits who were in a convalescent condition. The Liverpool State Hospital has been doing laundry work for the camp hospitals at Liverpool and Casula on two days in each week, in addition to a large quantity of washing from the main camp.

I am also entitled to some credit for the initiation of the enquiry which so promptly stamped out the July outbreak of cerebro-spinal meningitis at the Liverpool Camp. Dr. Paton, accompanied by Professor Welsh, Dr. Armstrong, and Dr. Cleland, visited the camp, made examinations, and established there a laboratory, which has ever since been under the control of the lastnamed gentleman, who is our principal Microbiologist. I also delivered addresses to some of the Dentists' Associations, and induced their members, almost without exception, to give their services free to recruits and soldiers for all kinds of dental work. In August last the question of military dentistry became one of such moment, and so many recruits were being rejected on account of dental defects, that I decided to throw open the whole of the resources of the United Dental Hospital and College to recruits and soldiers, and a branch was also opened at the Liverpool Camp. Altogether some 50 leading dentists and 15 expert mechanics are engaged on this national work. When visiting Sydney in December last, Major Hall, the principal Dental Officer of the Commonwealth, expressed his deep sense of gratitude to me for the splendid facilities of the Dental Hospital, and declared that we had done more for the teeth of our soldiery than all the other States put together. In his last report, Captain Donald Smith states that the scheme is now fully organized, and is working capitally, and that the work is increasing to such an extent that the staff are seriously considering how to cope with it. He adds that the hospital is now one of the most up-to-date of its kind in Australia, and undertakes all kinds of dental treatment, including fractures of jaws, facial restoration after operation, and regulation of teeth. During the quarter ended 31st December last there were performed for the military 4,276 extractions, 2,822 fillings, 1,096 treatments, 375 dentures, and 75 repairs.

Within two months of taking office I instructed the Health Officers to notify all the Municipalities which used garbage tips in the metropolitan area that I would proceed against them unless they installed garbage destructors. Some municipalities have already made good in this respect, and the delay in respect of others is excusable by reason of the difficulty in obtaining plant.

I have also more rigidly than before enforced the law which prohibits quackery and the sale of noxious drugs and appliances. Proper sanitation at country hotels has been insisted upon; the failure to provide it being penalized to the extent of the loss of the publican's license.

In connection with my visits to hospitals, I may say that in at least three cases my advice has resulted in a total saving of thousands of pounds to the State, with an equally effective result. In one case it had been proposed to erect married couple's quarters, a new isolation block, etc., the cost of which it would have been impossible to meet. I suggested to the hospital authorities that the desired accommodation might be obtained at a figure commensurate with the financial position by the conversion of the hospital laundry into quarters, the erection of a galvanized iron laundry with a concrete floor, and the conversion of the nurses' quarters into an isolation block, and the isolation block into nurses' quarters. At another country town it was advised that the addition of the adjoining laundry to the kitchen and the construction of an iron building on the drying green would save the £1,000 required for the erection of a new kitchen block. A large sum was saved at another hospital by the enclosure of its wide verandahs with fibro-cement, trellis, and canvas blinds, instead of with brick and glass as was proposed.

Here it may be said that I propose to save the State vast sums of money, and accelerate cures by adopting the three-wall system of hospital construction from cheap materials, now in use at the First Eastern General Hospital at Cambridge, England. A commencement will shortly be made at the Coast Hospital for the reception of infectious cases, that institution having been recently enlarged to the extent of three new pavilions.

By the way, I have been attacked for not going on with the State Drug Store proposal. I am not responsible for the delay; so far, the Cabinet has arrived at no conclusive decision on the subject, and no money for the establishment of this undertaking has been placed at my disposal.

The British Medical Association cannot be unmindful of the fact that I have always recognized the rights of the profession and of the public to be protected against unscrupulous practitioners, in fact, my recognition has not been confined to mere words, but has taken the shape of very conclusive action. In two recent instances I gave the Director-General of Public Health the instructions which led to two medical practitioners being summoned before the Medical Board to show cause why their names should not be removed from the Register for unprofessional conduct. In both instances the cases presented by the officers of this Department were so complete and conclusive that the Medical Board had no hesitation in deciding that the medical practitioners referred to should no longer be allowed to practice their profession in this State.

I claim no credit for this action, save that it offers another instance of my attention to duty, and assists in the furnishing of a conclusive reply to the charge that my obstructive and indolent policy has paralysed the work of the permanent officials of the Board of Health.

A great deal more might be said in defence of my administration, but I fear that already the space asked will be grudged me. I would only say that no public trustee was ever attacked with less justification than I. Neither time nor health has been spared in the conscientious performance of my duty, and if the results have not been proportionate to my efforts, it has been because of outside influences which were utterly beyond my control, as they would have been beyond the power of any other man who occupied my office.

The stab in the back which has been dealt at me is, in my opinion, simply an indication that the controversial methods of Germany are having an insidious influence on the politics of the State.

Yours, etc.,

Jan. 25 1916. GEORGE BLACK.

[The letter of the Minister of Public Health contains an account of activities of which we were quite unaware. We are pleased to learn of the various actions undertaken, and recognized that the lack of men, money and material must necessarily set a limit on departmental undertakings. We certainly do not grudge, as the Minister fears might be the case, the space he claims. We can assure the Minister that as far as we are concerned we know nothing of any private or personal motives actuating us in writing the article.]

BURROUGHS, WELLCOME AND CO.

Sir,—Certain malicious statements, which are calculated to injure us, and which have apparently originated with persons having interested motives, are being circulated, implying that our firm, Burroughs, Wellcome and Co., is, wholly or in part, German or of German origin.

We desire to contradict these statements most emphatically, as they are entirely without foundation. No German, or anyone of German origin, has ever been a member of the

firm or held any share or interest in it, nor has there ever been any German capital in the business.

The firm is entirely British, with its headquarters and principal works in London, England, and with an establishment and extensive works at Sydney, Australia, and also with establishments at Capetown, Montreal, Bombay, Shanghai, New York, Milan and Buenos Aires.

Mr. Henry S. Wellcome, who is a British subject, and has only English blood in his veins, is, and has been for more than twenty years, the sole proprietor.

We shall feel obliged by your inserting this letter in your journal.

Yours, etc.,

BURROUGHS, WELLCOME and CO.

Books Received.

MANUAL OF ANATOMY, SYSTEMATIC AND PRACTICAL, INCLUDING EMBRYOLOGY, by A. M. Buchanan, M.A., M.D., C.M., F.R.F.P.S., 1916. London: Baillière, Tindall & Cox; Third Edition, with 675 illustrations, mostly original and in colours; University Series; demi 8vo, pp. 1743. Price, 21s. net.

Medical Appointments.

Dr. R. G. Ruddle has been appointed Officer of Health for the Daylesford Borough, Victoria, in place of Dr. F. E. Hutchinson (resigned).

Dr. R. A. Manly has been appointed Officer of Health for the Werribee Shire, Victoria, in place of Dr. G. R. Adcock (resigned).

The following is the constitution of the Board appointed in accordance with the provisions of the Midwifery Act of Victoria, 1915: Dr. E. Robertson, Chairman of the Board of Public Health, Dr. Janet Grieg, Board of Education, Mr. W. R. Anderson, Secretary of the Law Department, and Dr. Johnstone, of the Health Department (Secretary).

Dr. Michael Henry Downey has been appointed Superintendent of the Mental Hospital, Parkside, South Australia, in place of Dr. Cleland (resigned).

Dr. James Charles Robert Lind has been appointed Deputy Superintendent of the Mental Hospital, Parkside, South Australia, in place of Dr. Downey (promoted).

Dr. M. H. Downey has been appointed Medical Superintendent of the Hospital for Criminal Mental Defectives, Parkside, South Australia.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xvii.

Proserpine District Hospital, North Queensland, Medical Officer.

Oberon District, Medical Officer.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
WESTERN AUSTRALIA. (Hon. Sec., 230 St. George's Terrace, Perth.)	Swan District Medical Officer. All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Department of Public Instruction—New Appointments as Medical Officer, Ophthalmic Surgeon, Ear, Nose and Throat Surgeon, Physician. Australian Natives' Association. Balmain United F.S. Dispensary. Canterbury United F.S. Dispensary. Goulburn F.S. Association. Leichhardt and Petersham Dispensary. M.U. Oddfellows' Med. Inst., Elizabeth Street, Sydney. Marrickville United F.S. Dispensary. N.S.W. Ambulance Association and Transport Brigade. North Sydney United F.S. People's Prudential Benefit Society. Phœnix Mutual Provident Society. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Mudgee (except A.H.C.G., M.U.I.O.O.F., U.A.O.D., and P.A.F.S.). F.S. Lodges at Orange. F.S. Lodges at Parramatta, Penrith and Auburn. F.S. Lodges at Wellington. Newcastle Collieries — Killingworth, Seaham Nos. 1 and 2, West Wallsend.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	The F.S. Medical Assoc., Incorp., Adelaide.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Brisbane United F.S. Institute. Croydon Hospital. Laidley Hospital, Medical Officer.
NEW ZEALAND: WELLINGTON DIVISION. Hon. Sec., Wellington.)	F.S. Lodges, Wellington, N.Z.

Diary for the Month.

Feb. 10.—Vic. Branch, B.M.A., Council.
Feb. 11.—S. Aust. Branch, B.M.A., Council.
Feb. 15.—N.S.W. Branch, Executive and Finance Committee, Ethics Committee.
Feb. 16.—W. Aust. Branch, B.M.A., General.
Feb. 23.—Vict. Branch, B.M.A., Council.
Feb. 24.—S. Aust. Branch, B.M.A., General.
Feb. 29.—N.S.W. Branch, Medical Politics Committee, Organization and Science Committee.
Mar. 1.—Vic. Branch, B.M.A., Branch.
Mar. 3.—Queensland Branch, B.M.A., Branch.

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